

1000

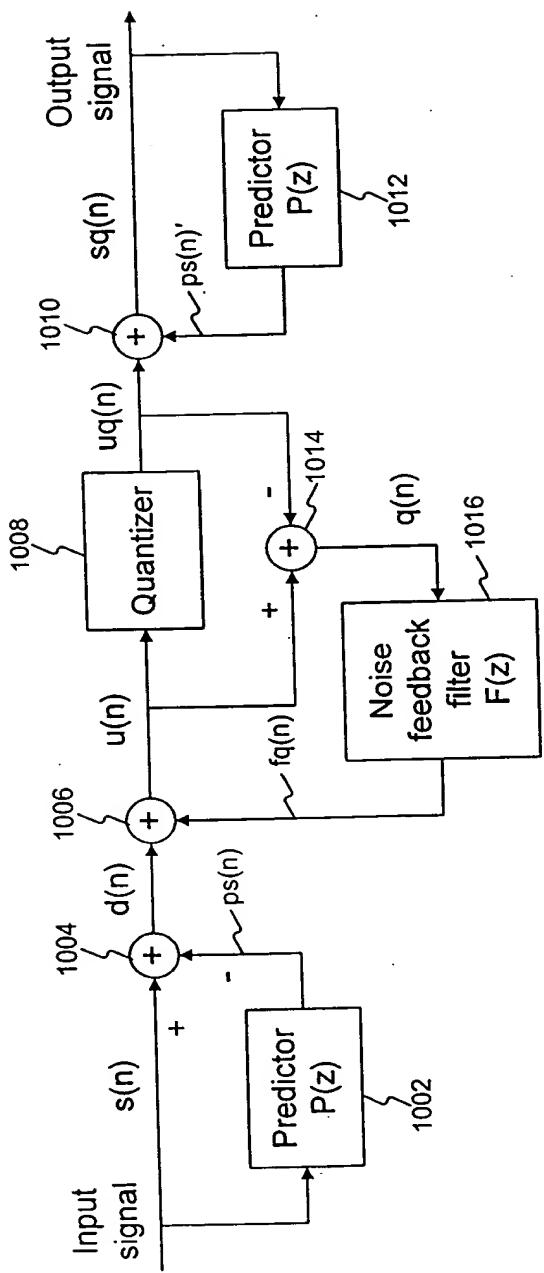


Figure 1 Conventional Noise Feedback Coding

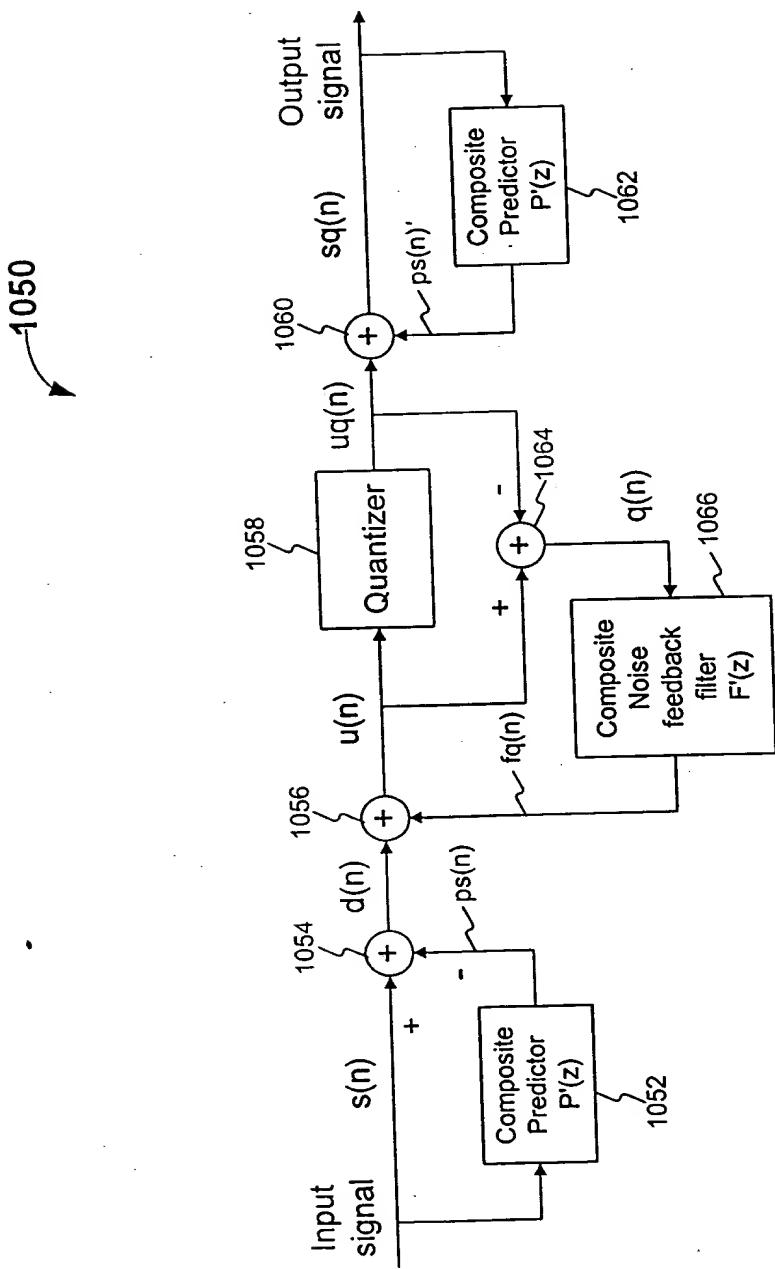


Figure 1A Noise Feedback Coding Using Composite Short-Term and Long-Term Predictors and Composite Short-Term and Long-Term Filter

2000

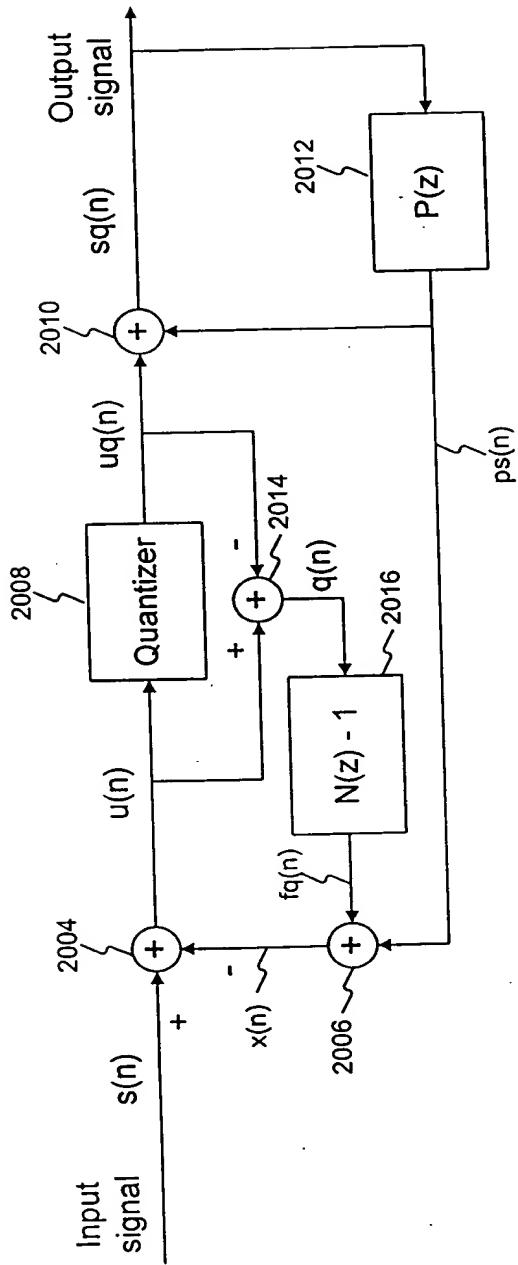


Figure 2 An alternative form of conventional Noise Feedback Coding

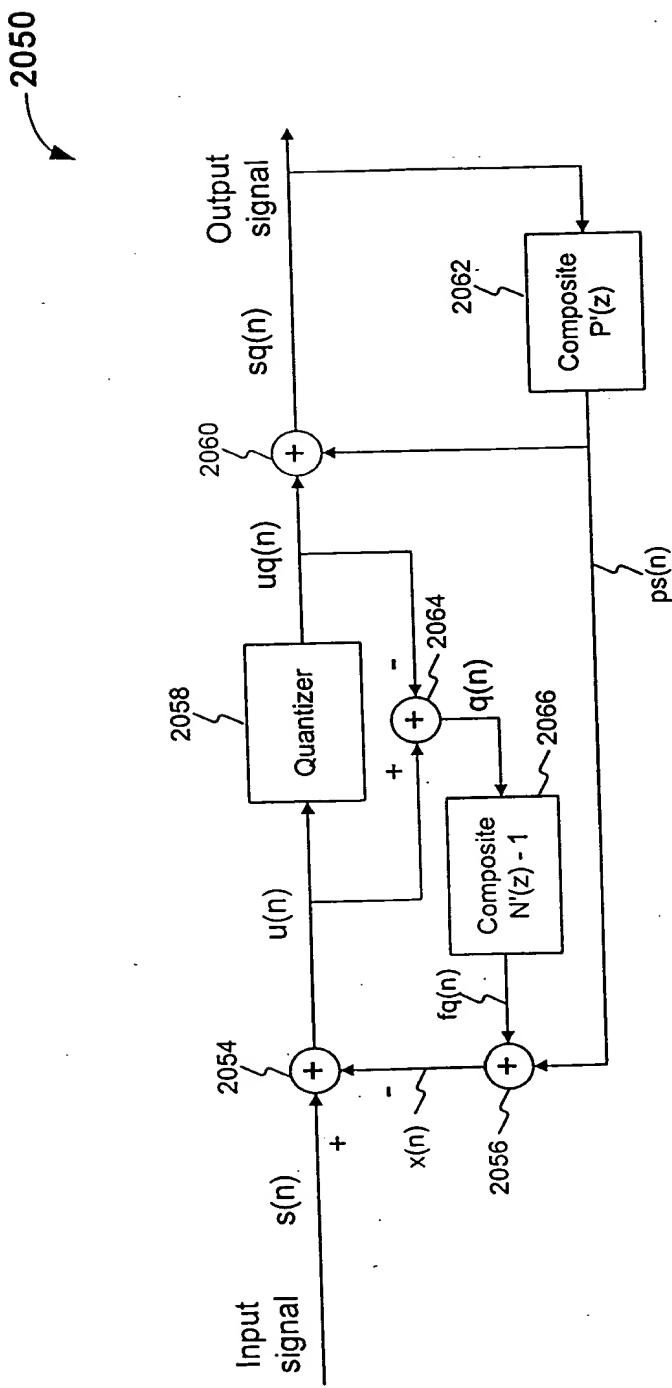


Figure 2A Noise Feedback Coding Using Composite Predictor and
Composite Noise Filter

3000

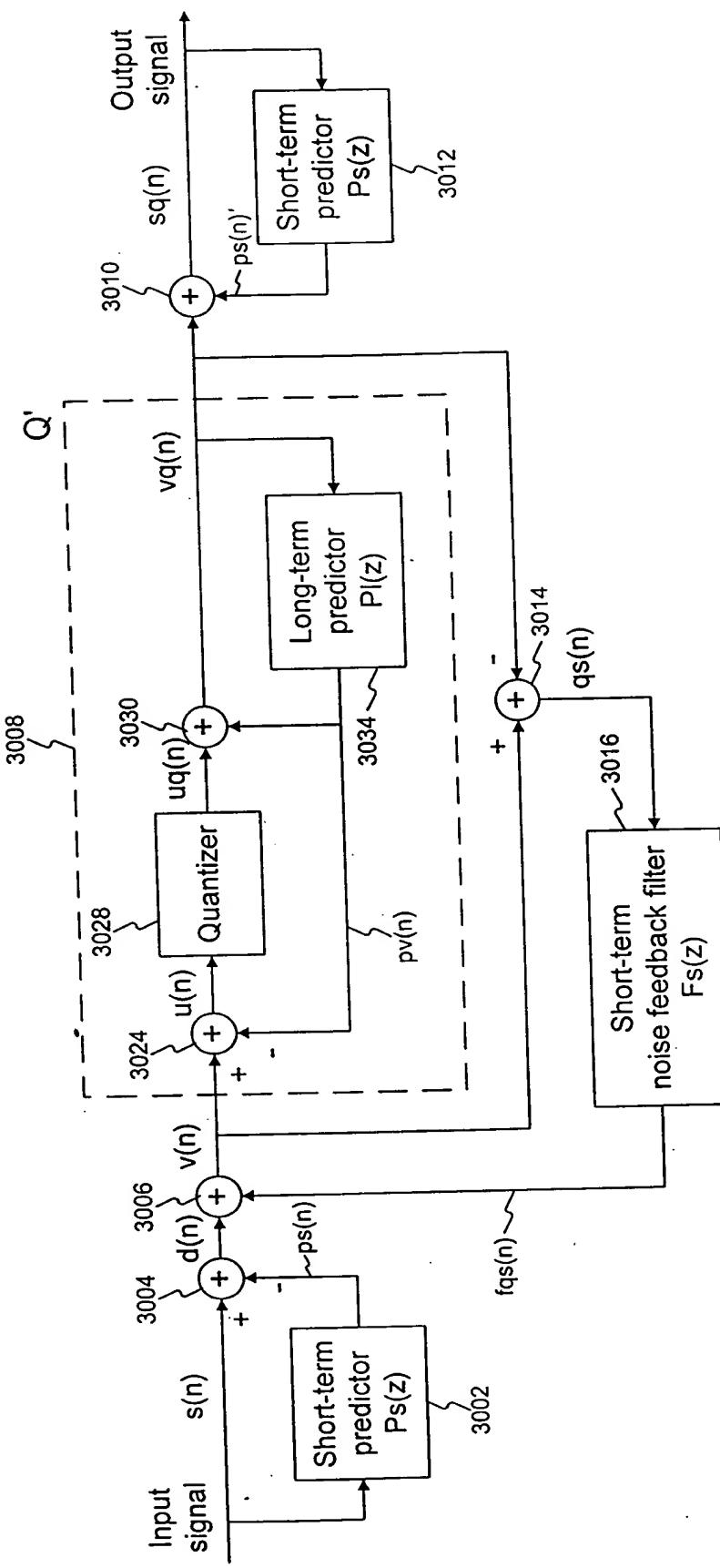


Figure 3 Noise Feedback Coding with short-term and long-term prediction but only short-term noise spectral shaping

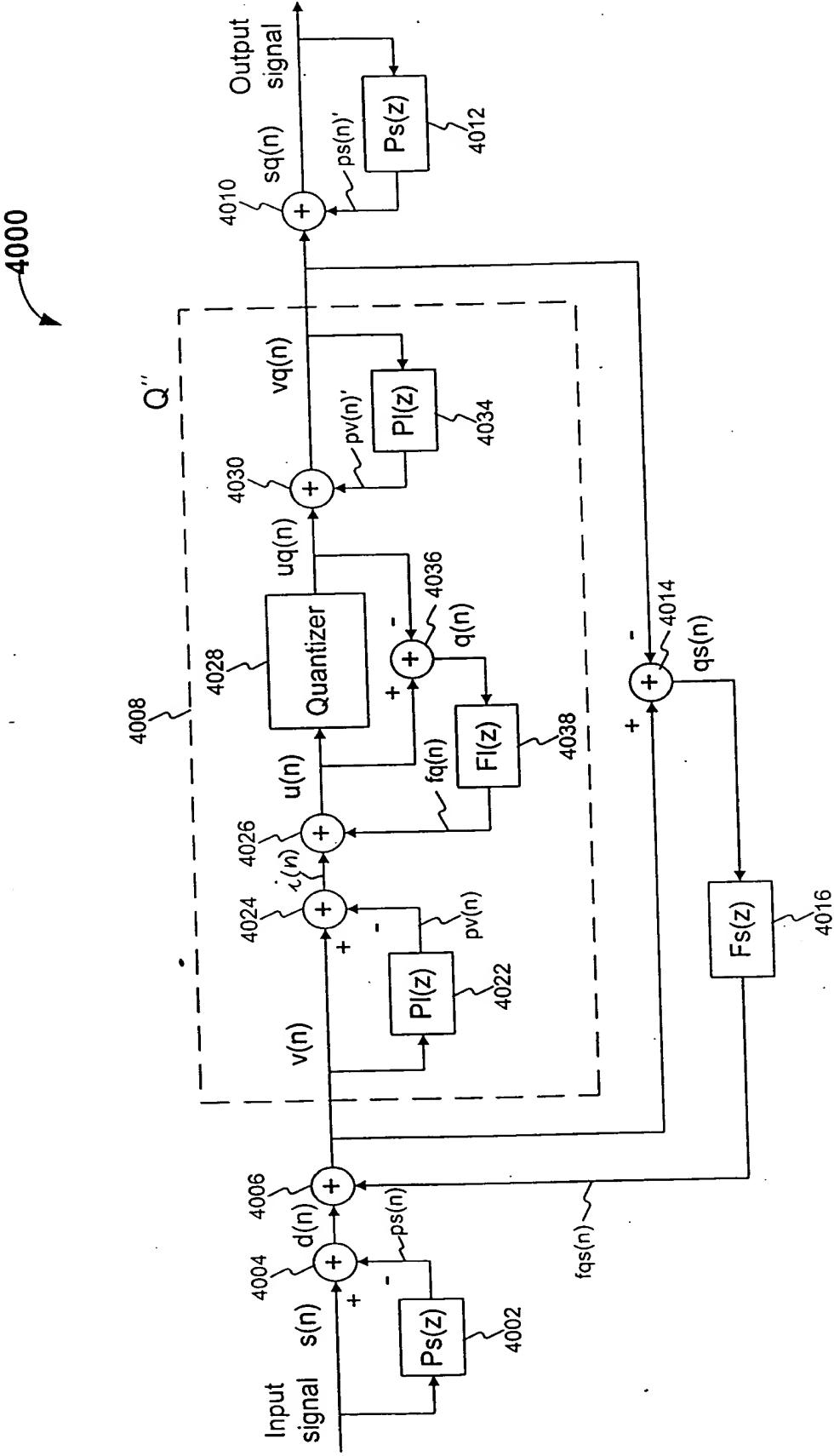


Figure 4 Nested two-stage Noise Feedback Coding structure with short-term and long-term prediction and short-term and long-term noise spectral shaping

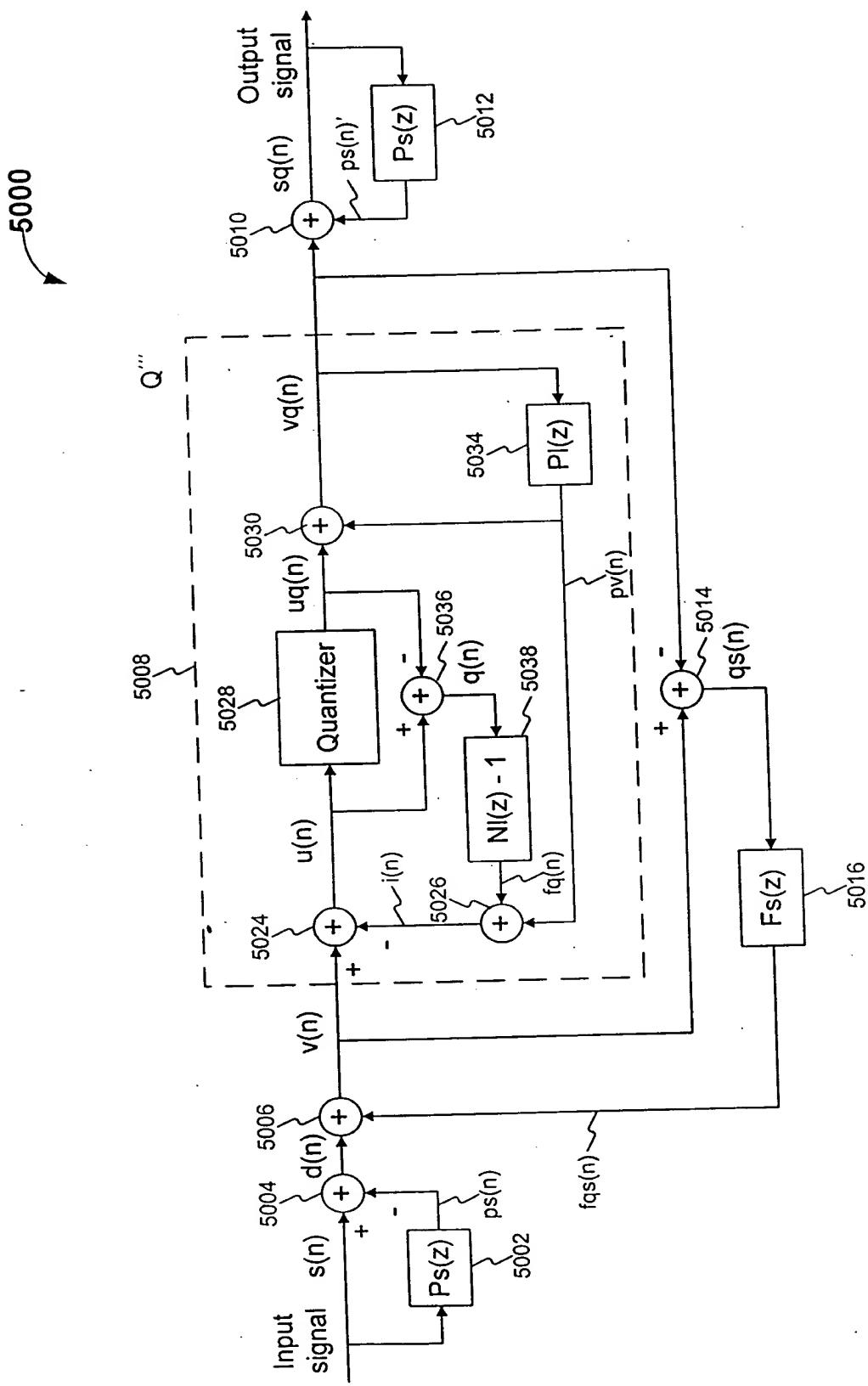


Figure 5 An alternative nested two-stage Noise Feedback Coding structure with short-term and long-term prediction and short-term and long-term noise spectral shaping

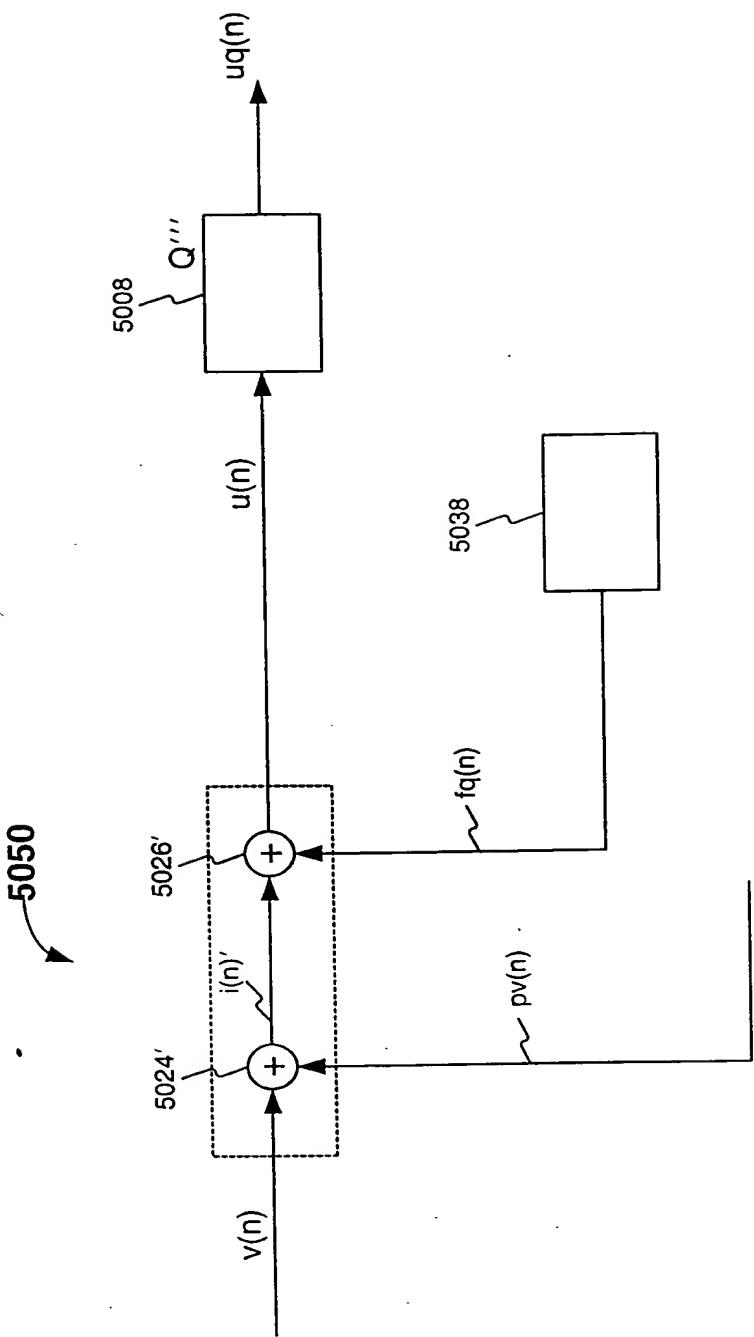


FIG. 5A

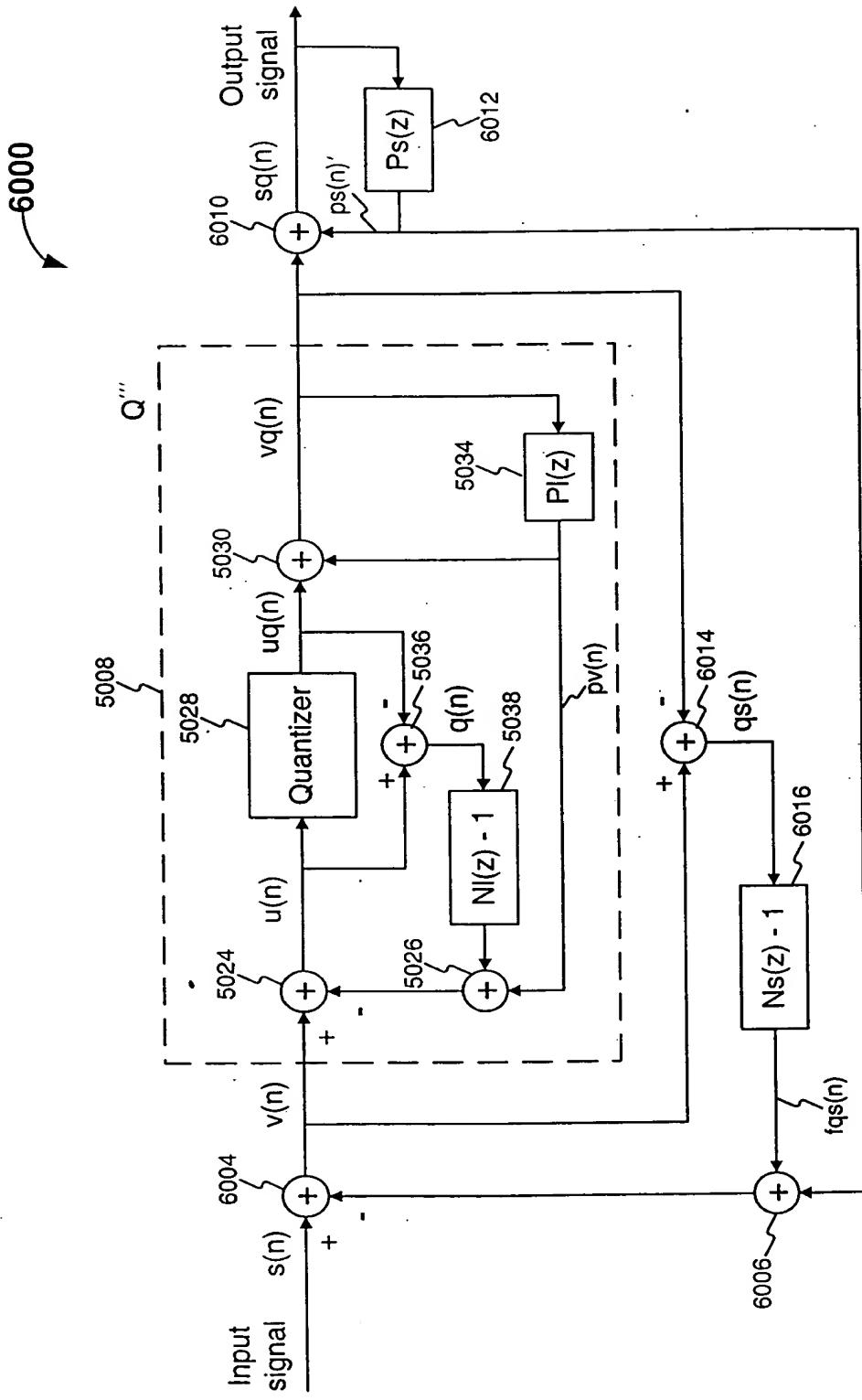


Figure 6 Another alternative nested two-stage Noise Feedback Coding structure with short-term and long-term prediction and short-term and long-term noise spectral shaping

0003-56.vsd/23

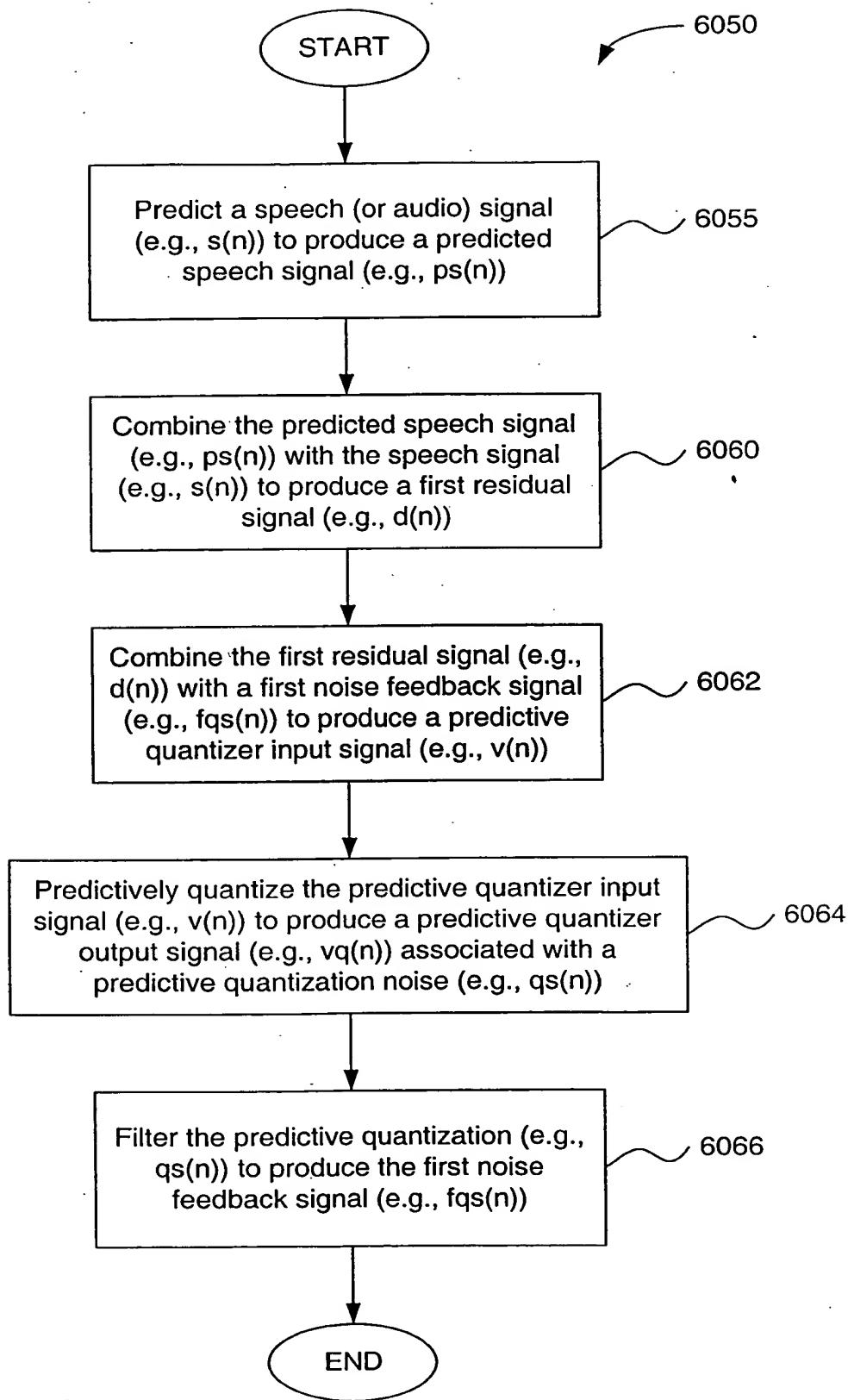


FIG. 6A

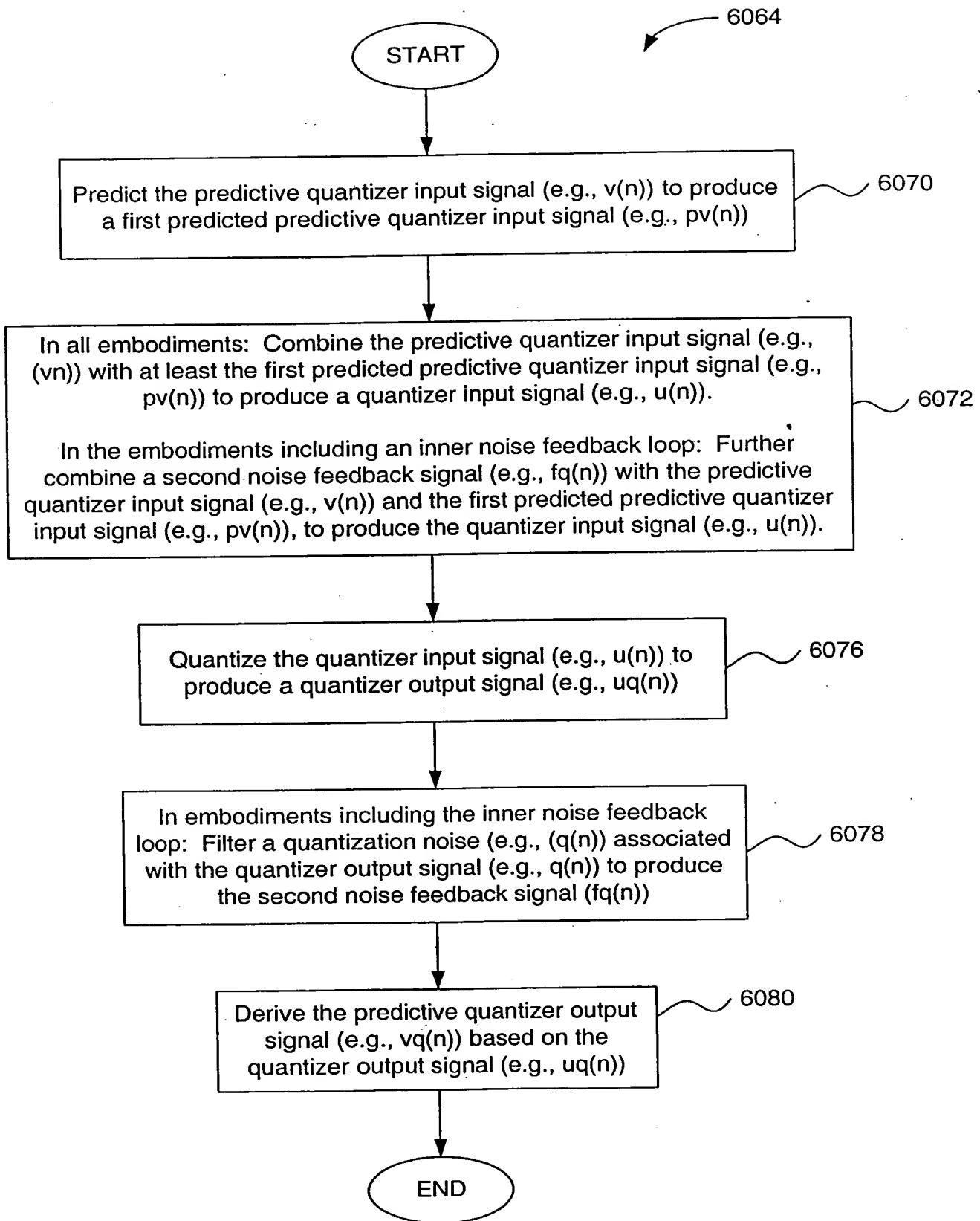


FIG. 6B

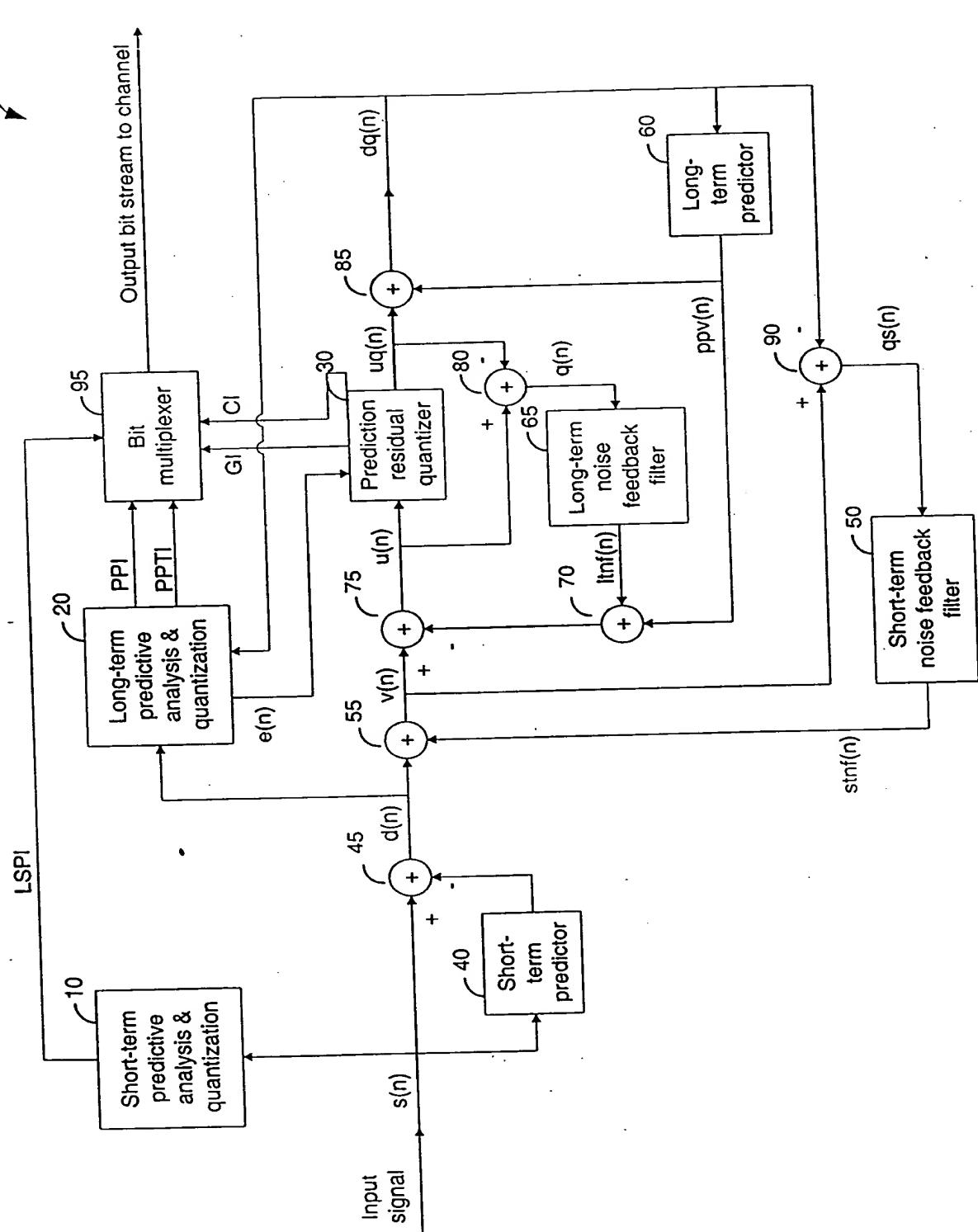


Figure 7 Encoder of a nested two-stage noise feedback codec (TSNFC)

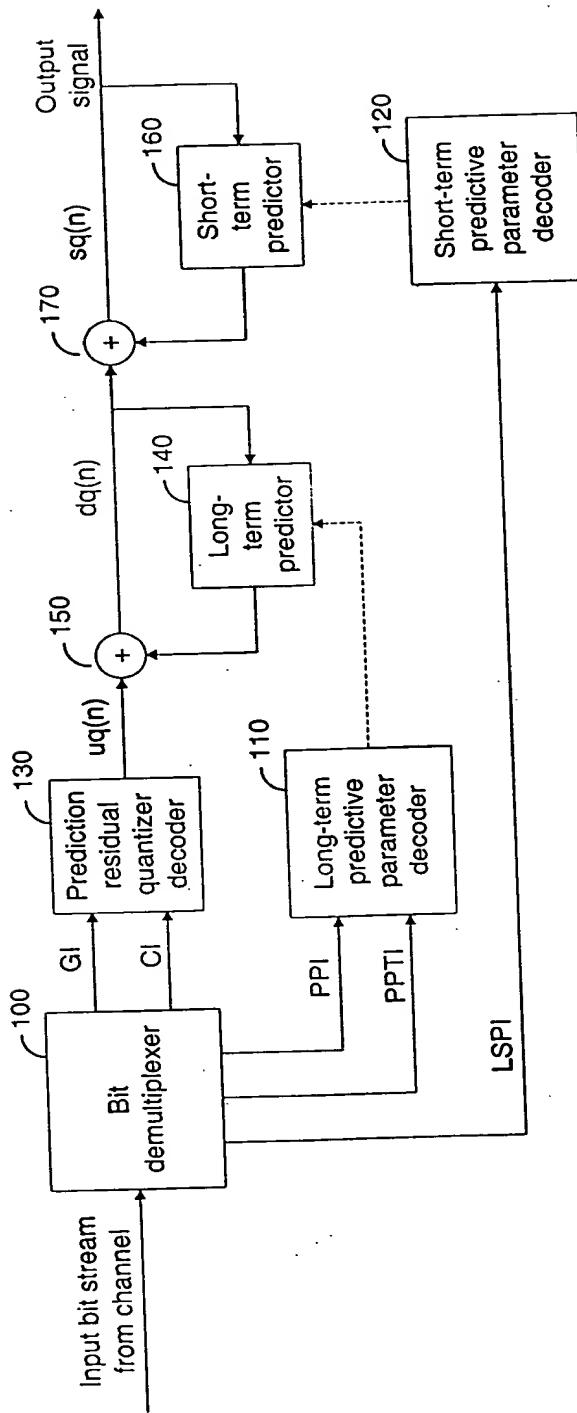


Figure 8 Decoder corresponding to the TSNFC encoder in Fig. 7

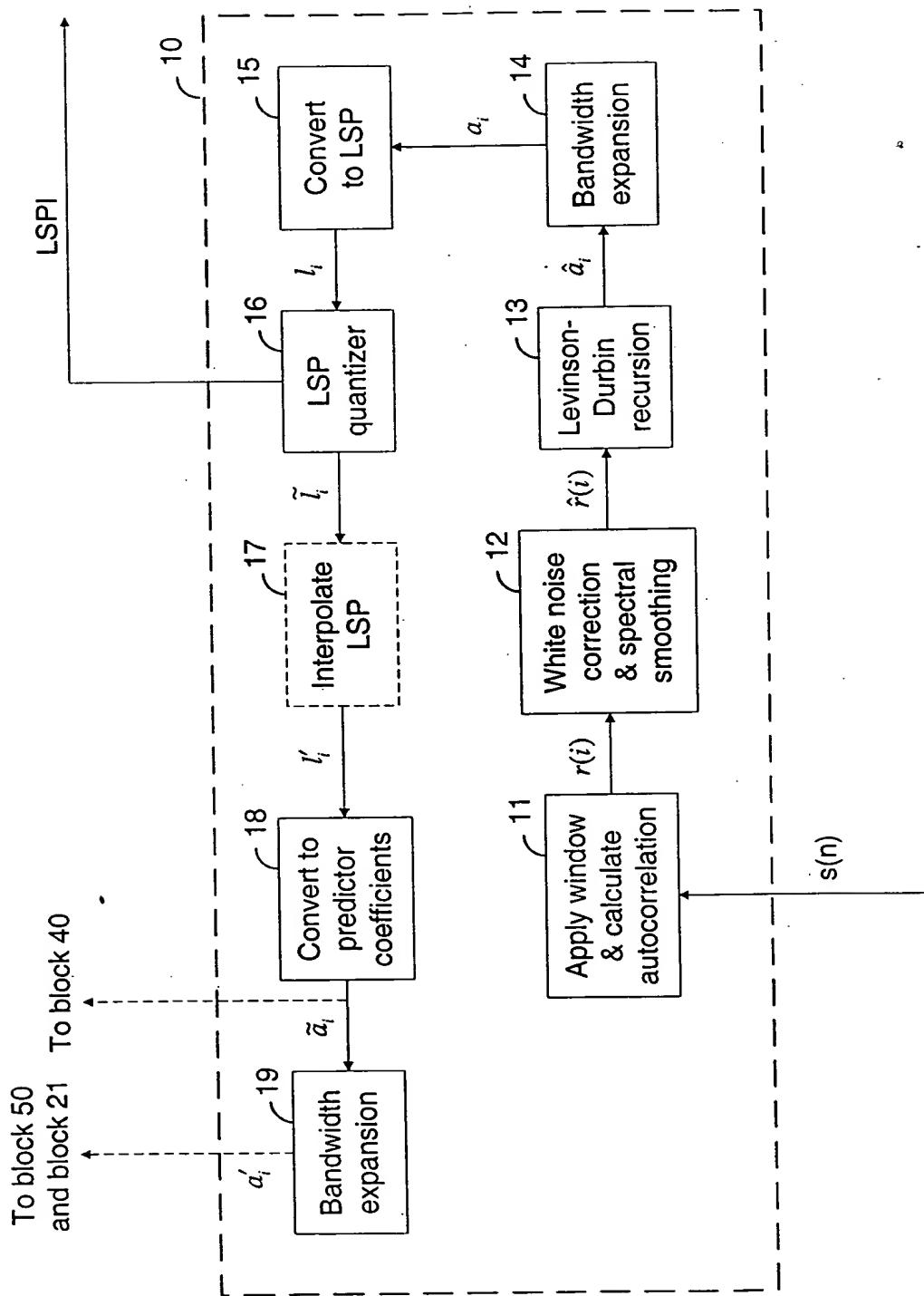


Figure 9 Short-term predictive analysis and quantization (block 10)

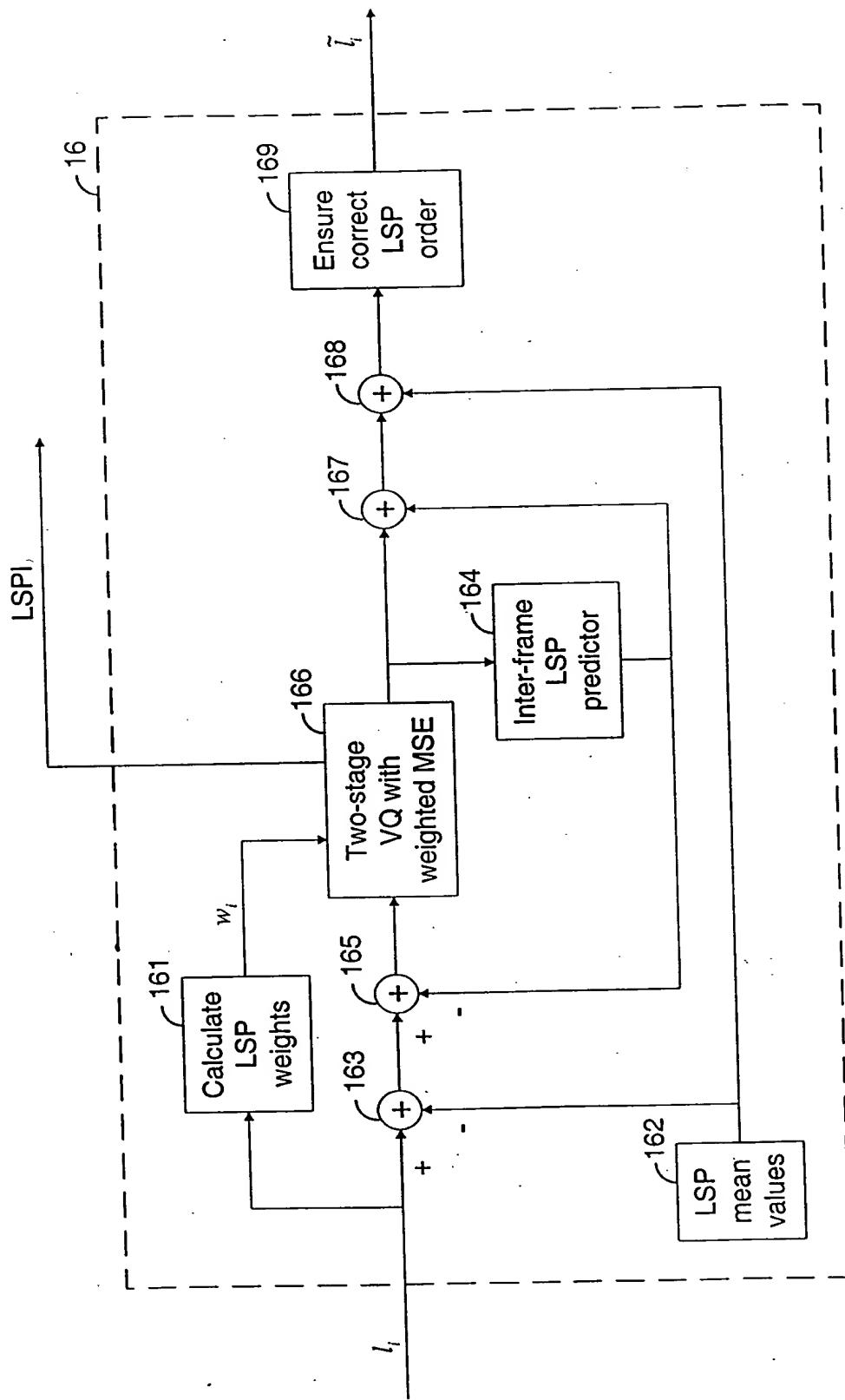


Figure 10 LSP quantizer (block 16)

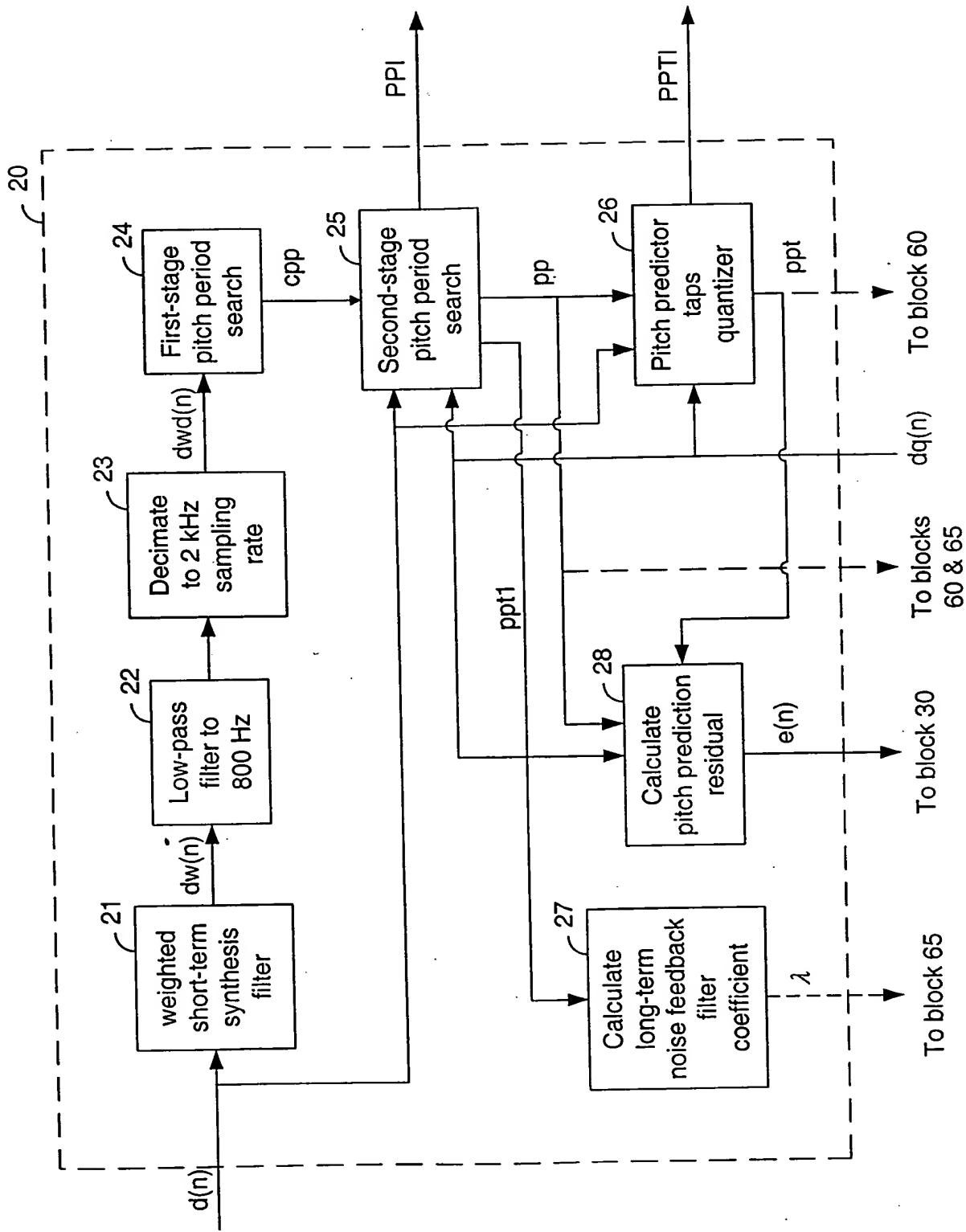


Figure 11 Long-term predictive analysis and quantization (block 20)

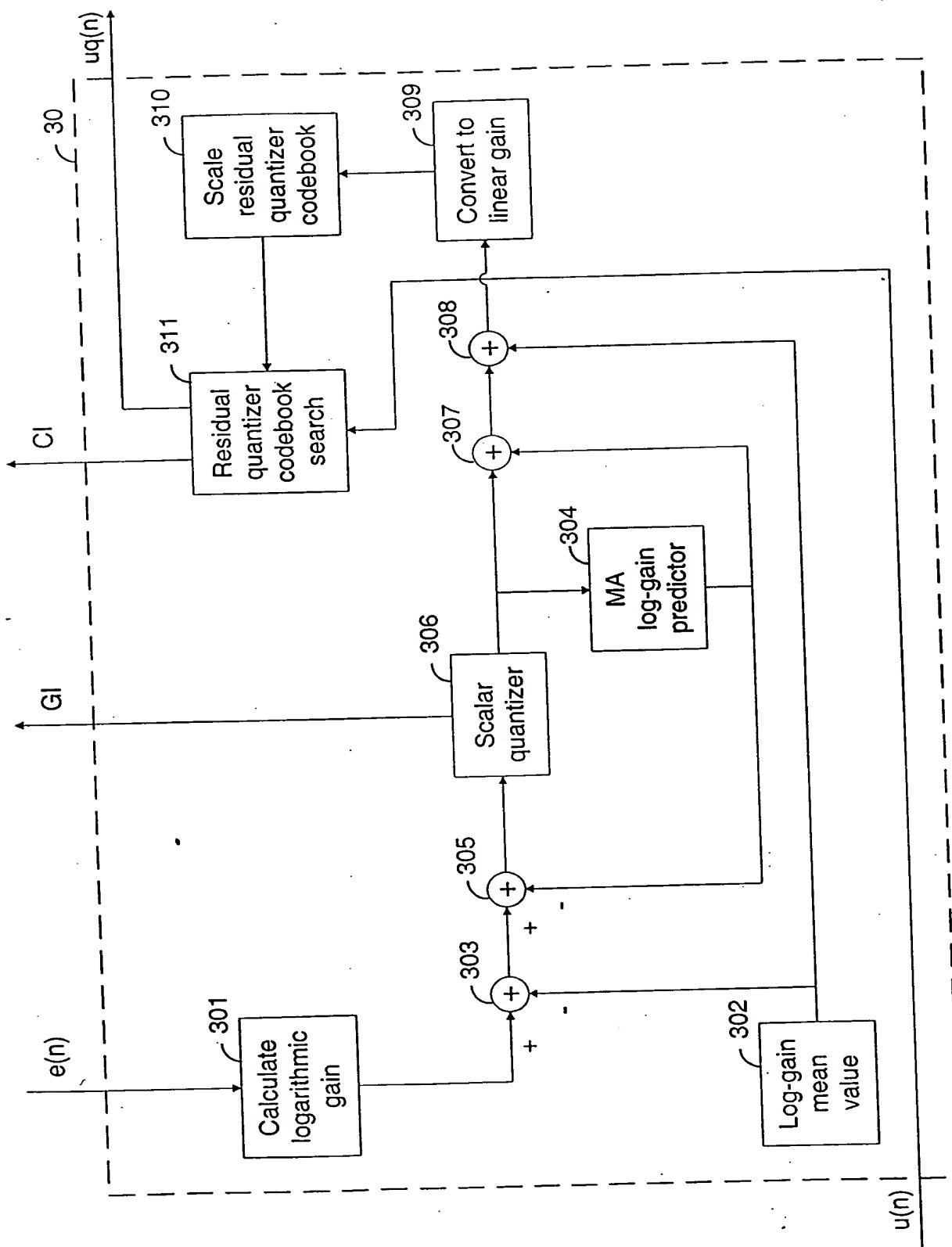
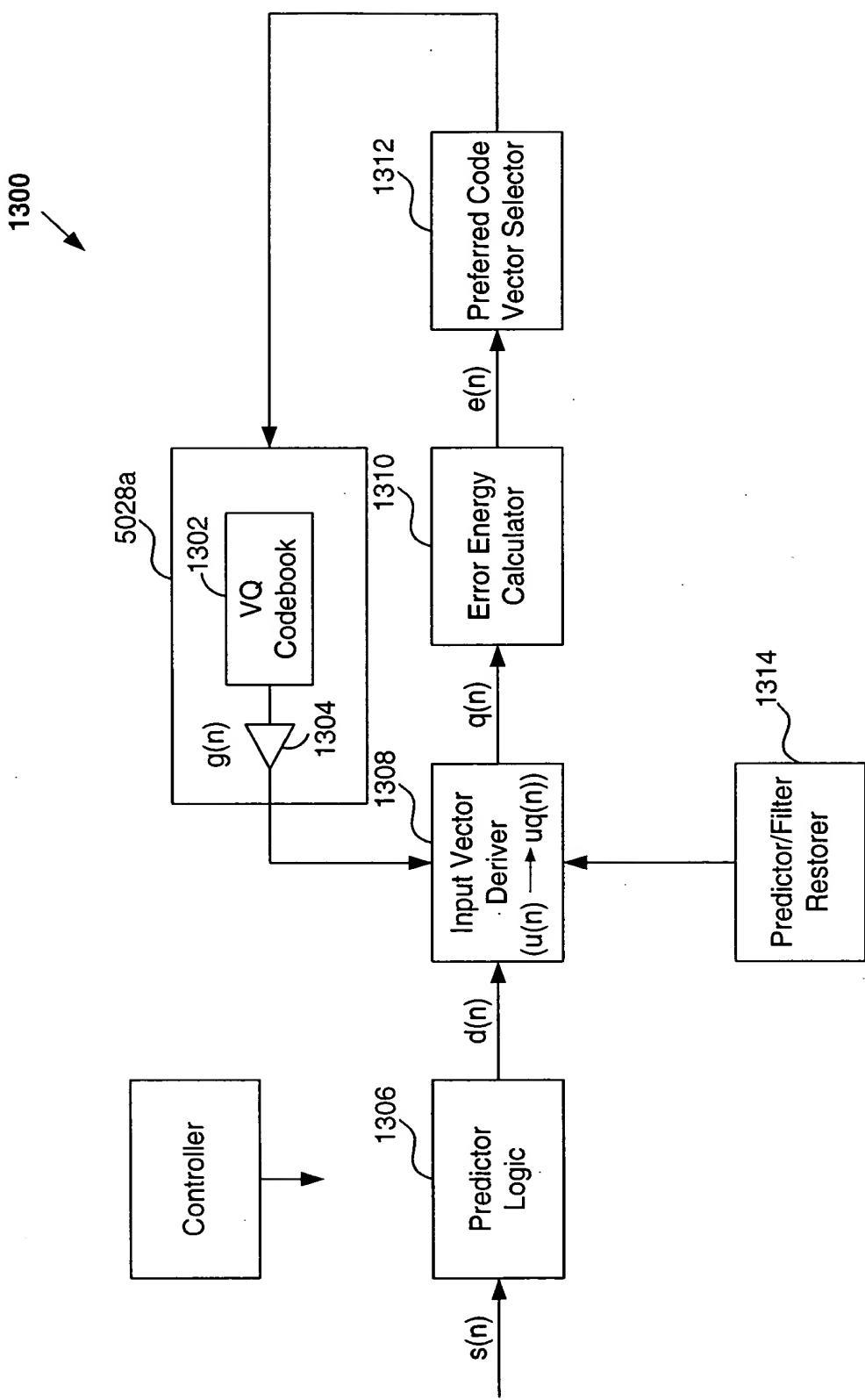


Figure 12 Prediction residual quantizer (block 30)

FIG. 13A



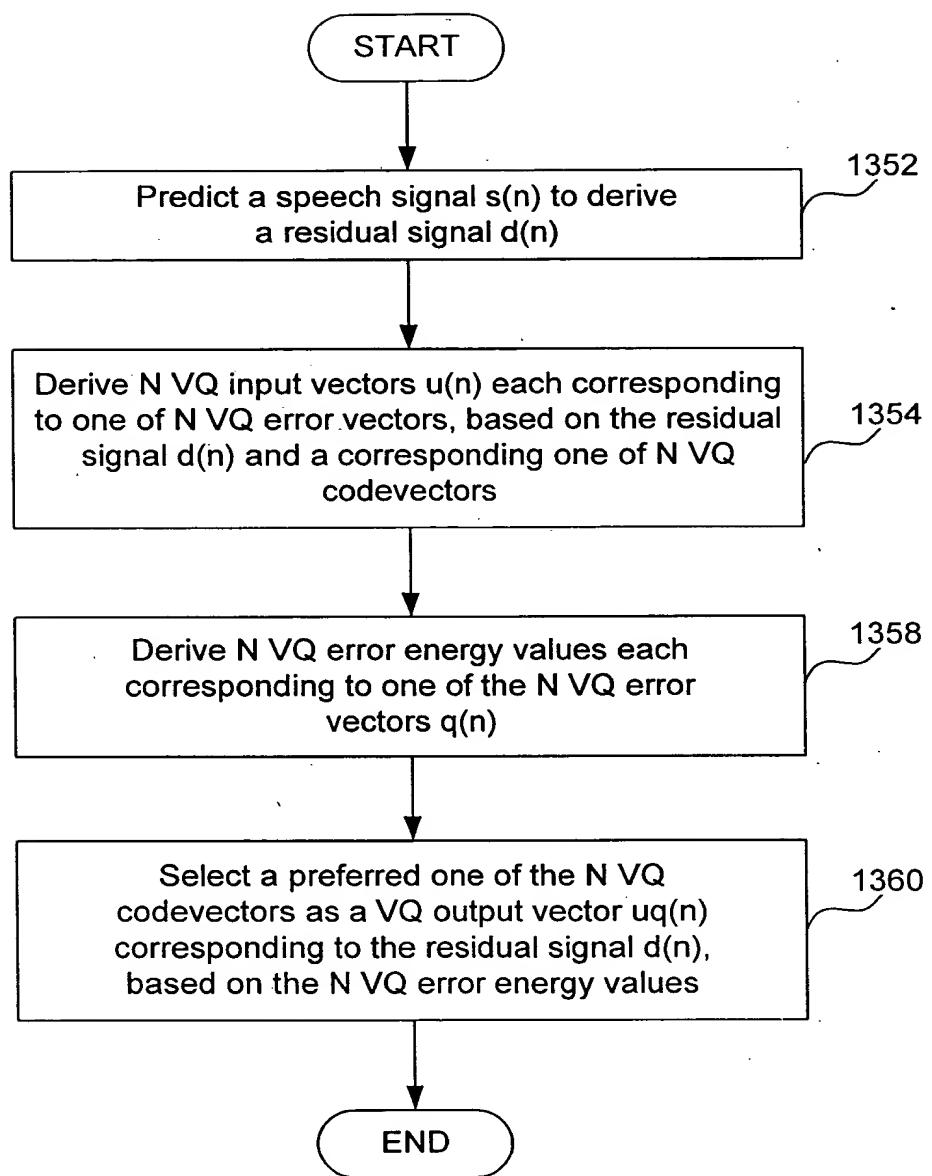
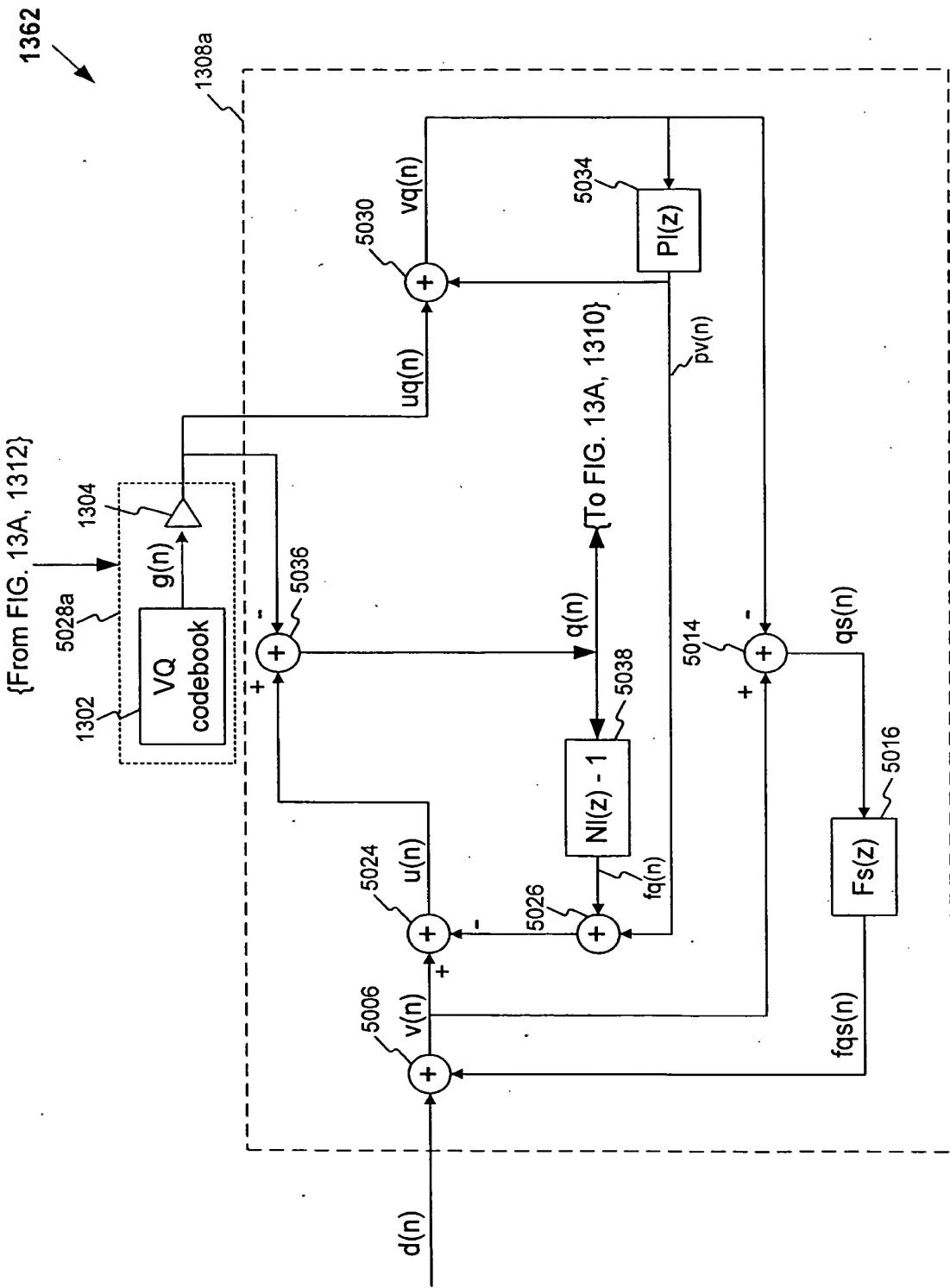


FIG. 13B

FIG. 13C

The portion of the codec structure that is used in prediction residual VQ codebook search of the two-stage noise feedback codec of Fig. 5.

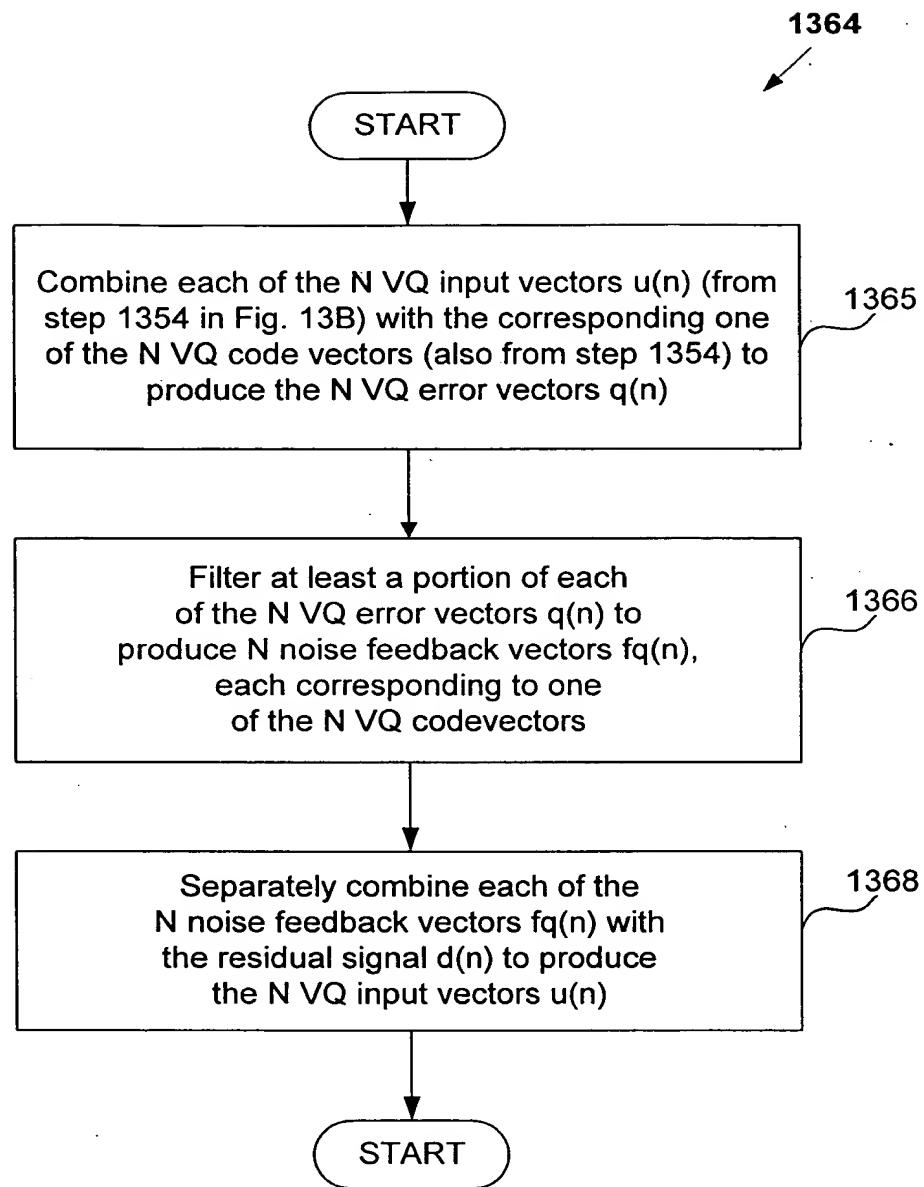


FIG. 13D

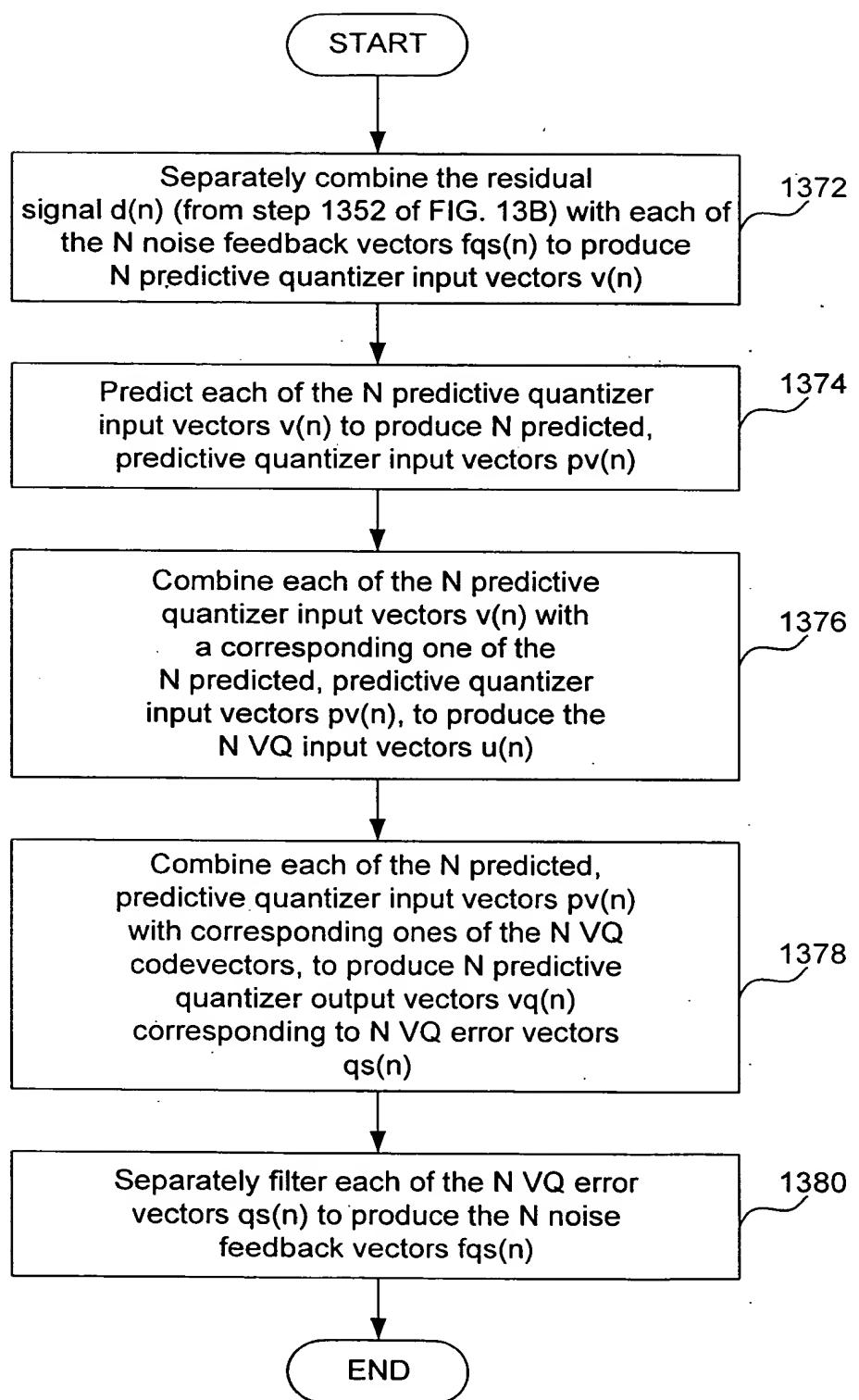
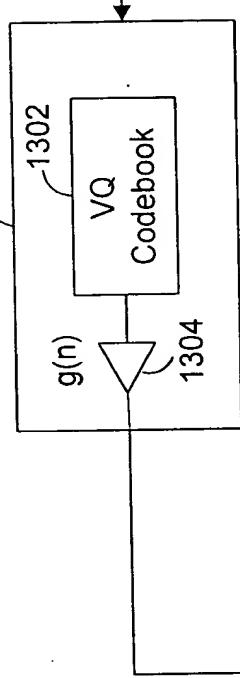


FIG. 13E

1400

5028a



1402

ZERO-INPUT
Response Filter
Structure

qzi(n)

1306

Predictor
Logic

d(n)

Restorer

1404

ZERO-STATE
Response Filter
Structure

qzs(n)

1410

Preferred
Codevector
Selector

1412

Error Energy
Calculator

FIG. 14A

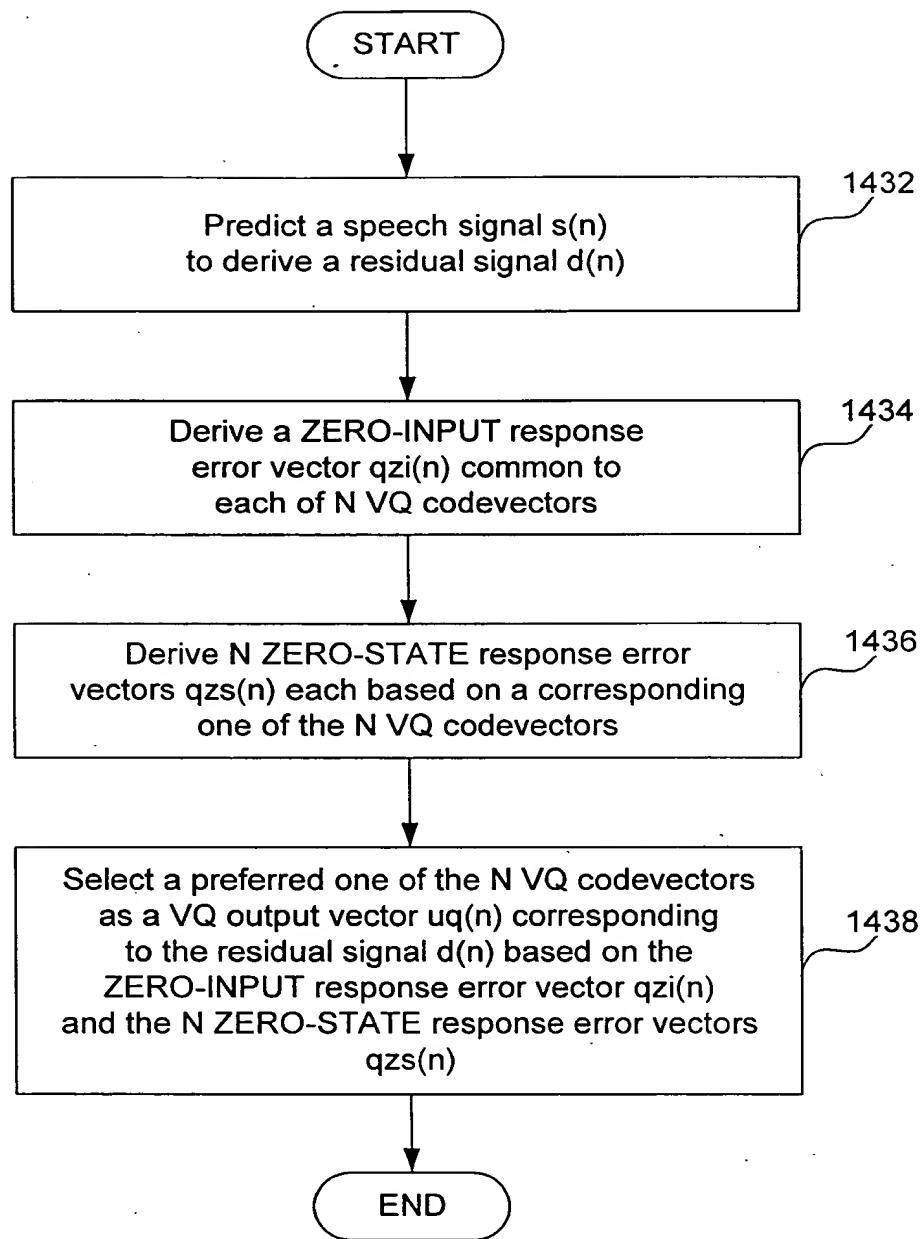
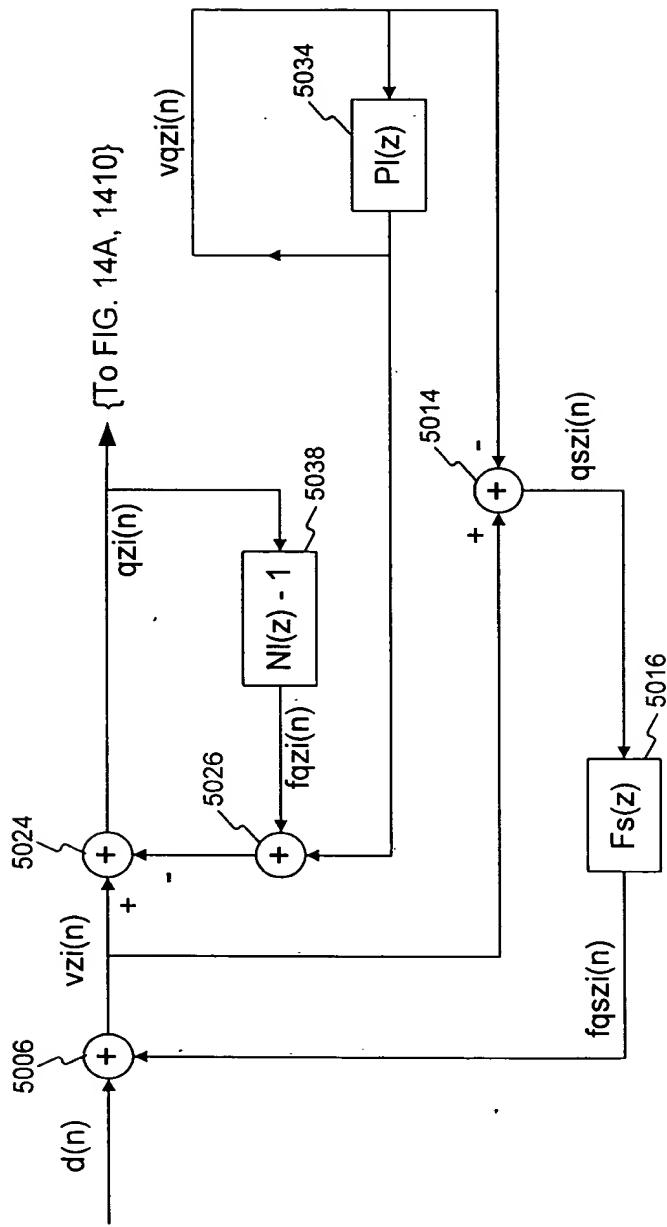


FIG. 14B

1402a



Filter structure during the calculation of the zero-input response of $q(n)$ of Fig. 13C.

FIG. 14C

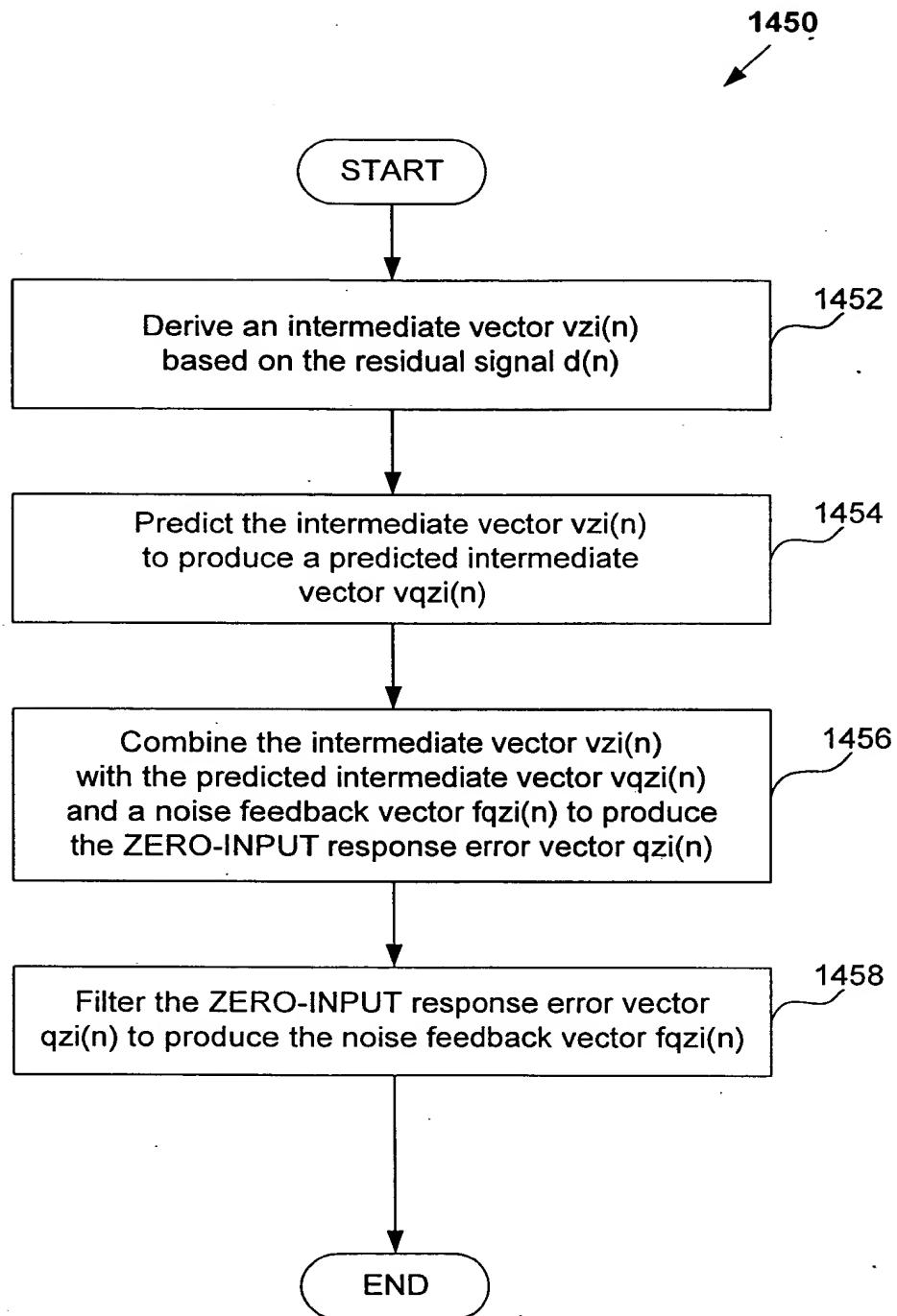


FIG. 14D

00000000000000000000000000000000

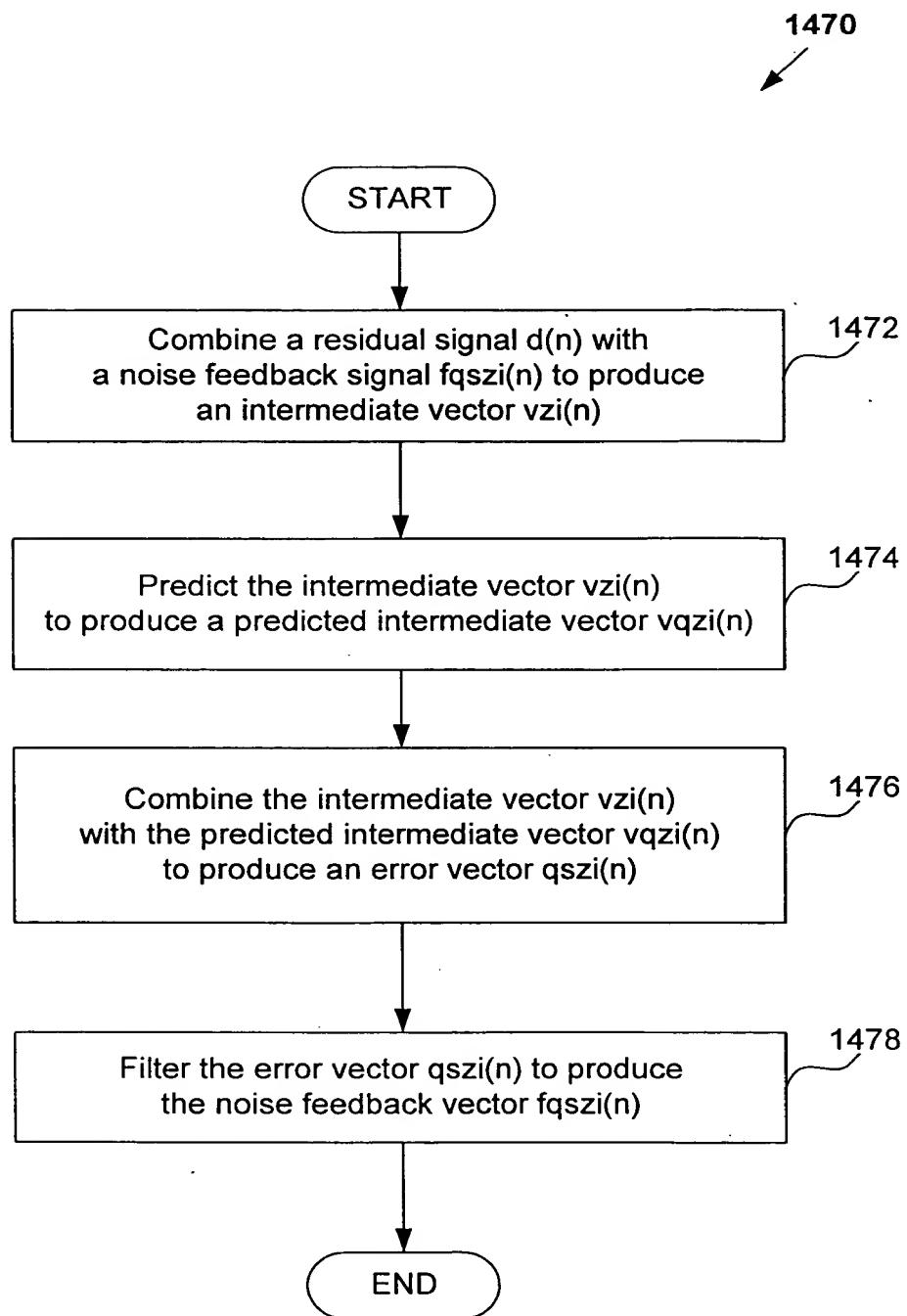
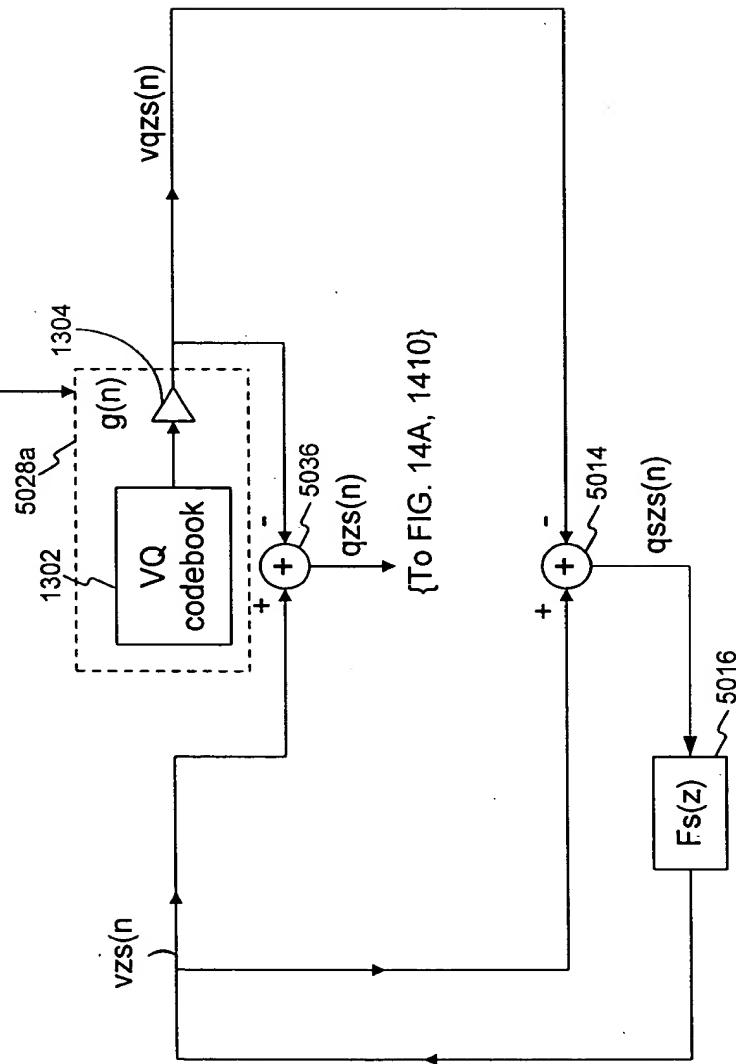


FIG. 14E

1404a

{From FIG. 14A, 1412}



Filter structure during the calculation of the zero-state response of $q(n)$ in Fig. 13C.

FIG. 15A

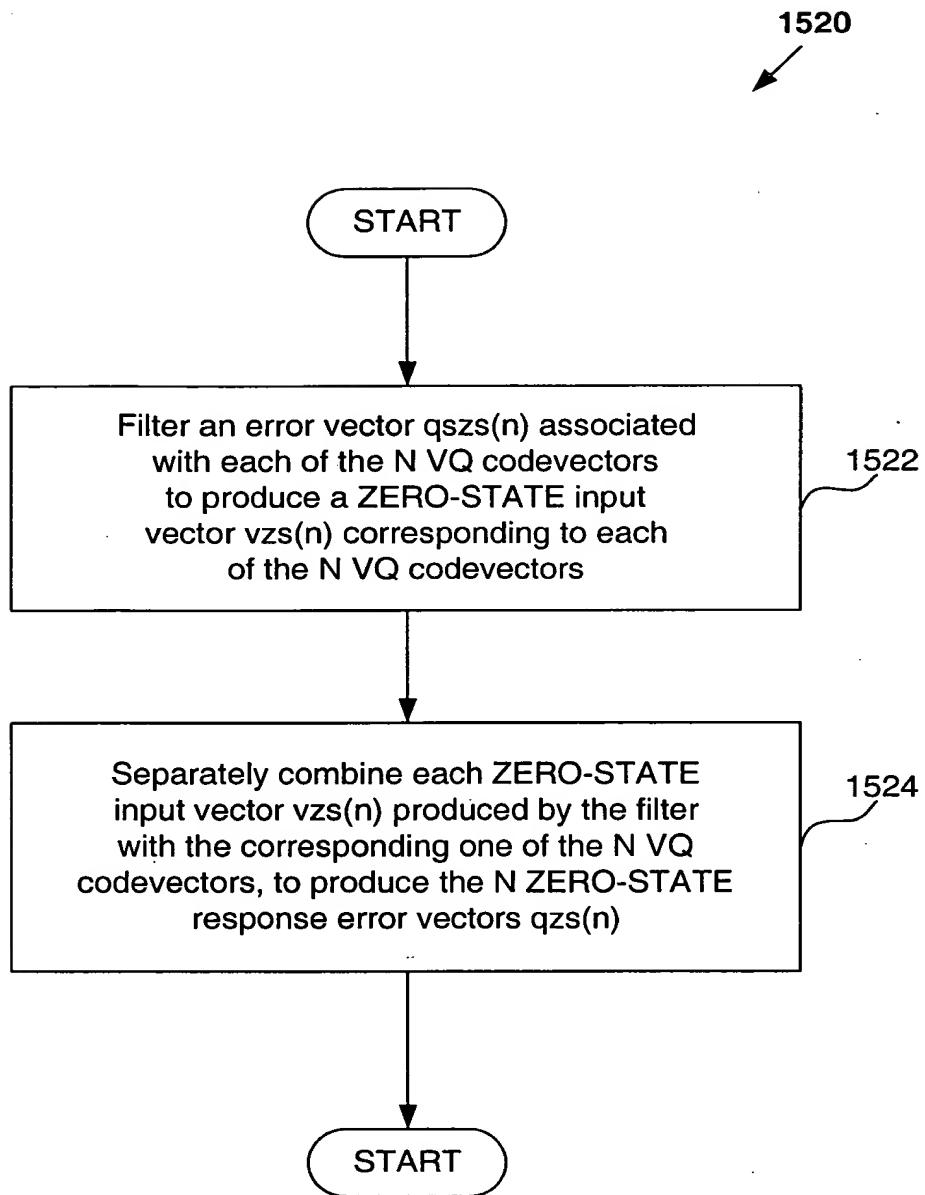
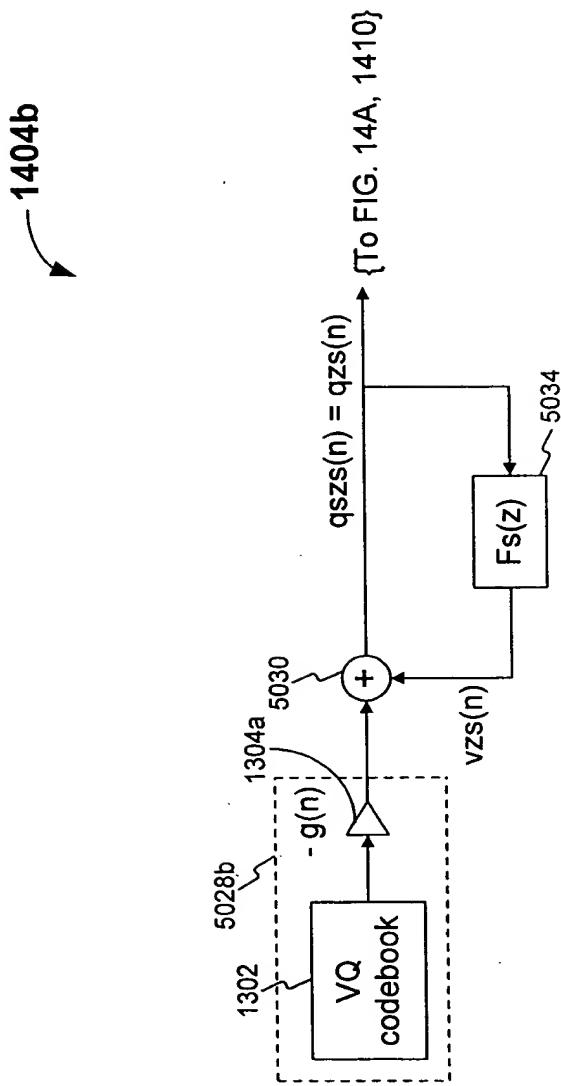


FIG. 15B



A filter structure equivalent to the structure in Fig. 15A.

FIG. 16A

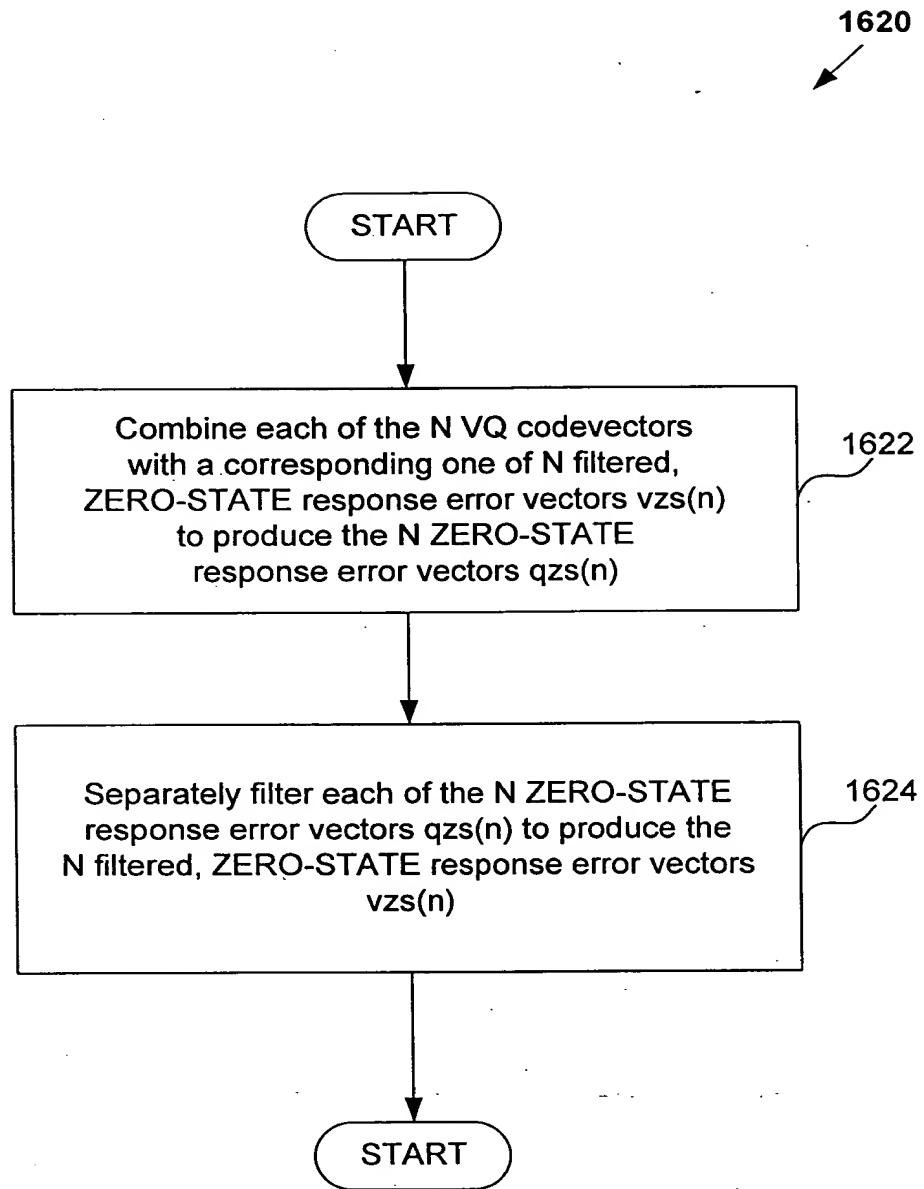


FIG. 16B

0101-41.vsd/15

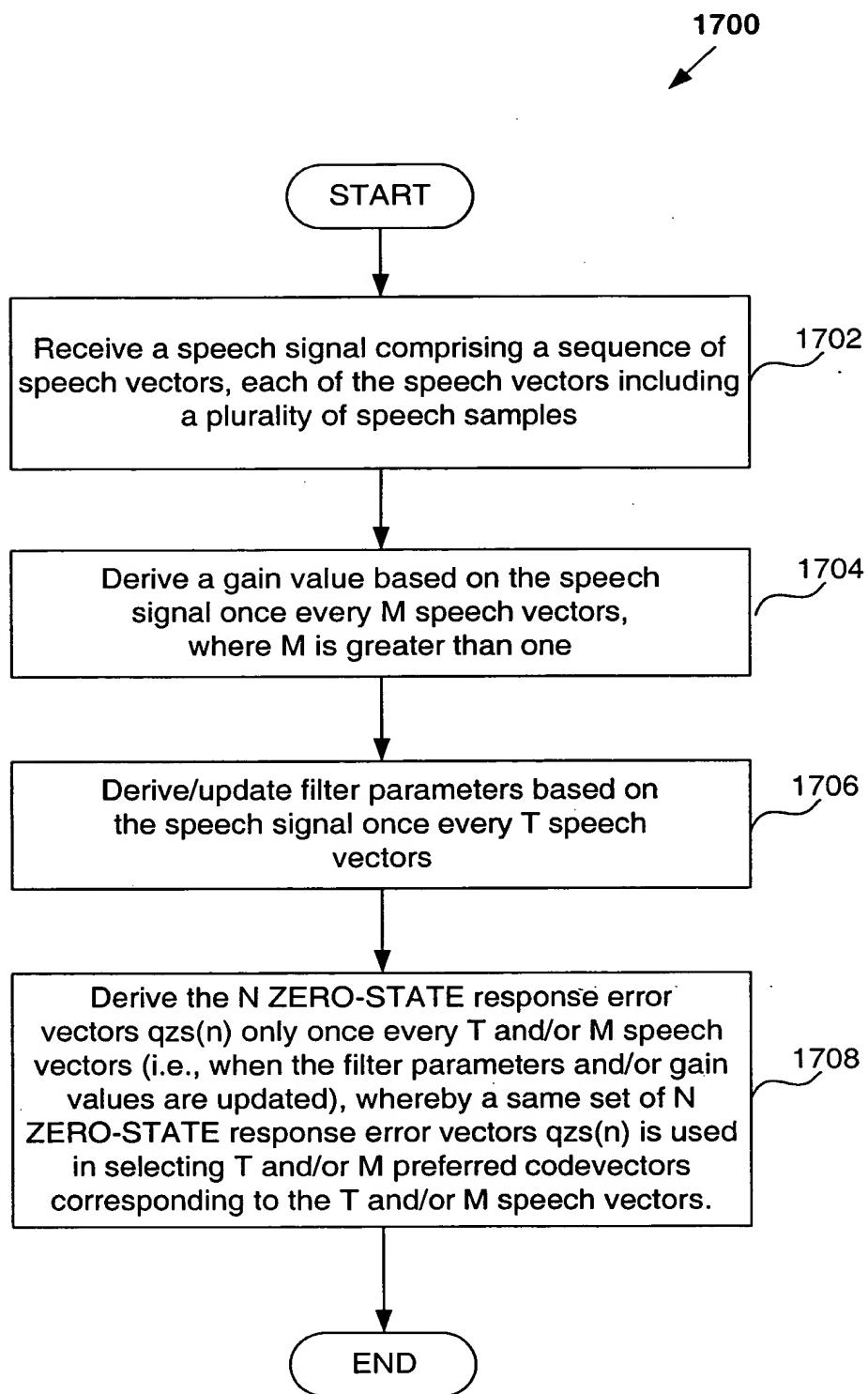


FIG. 17

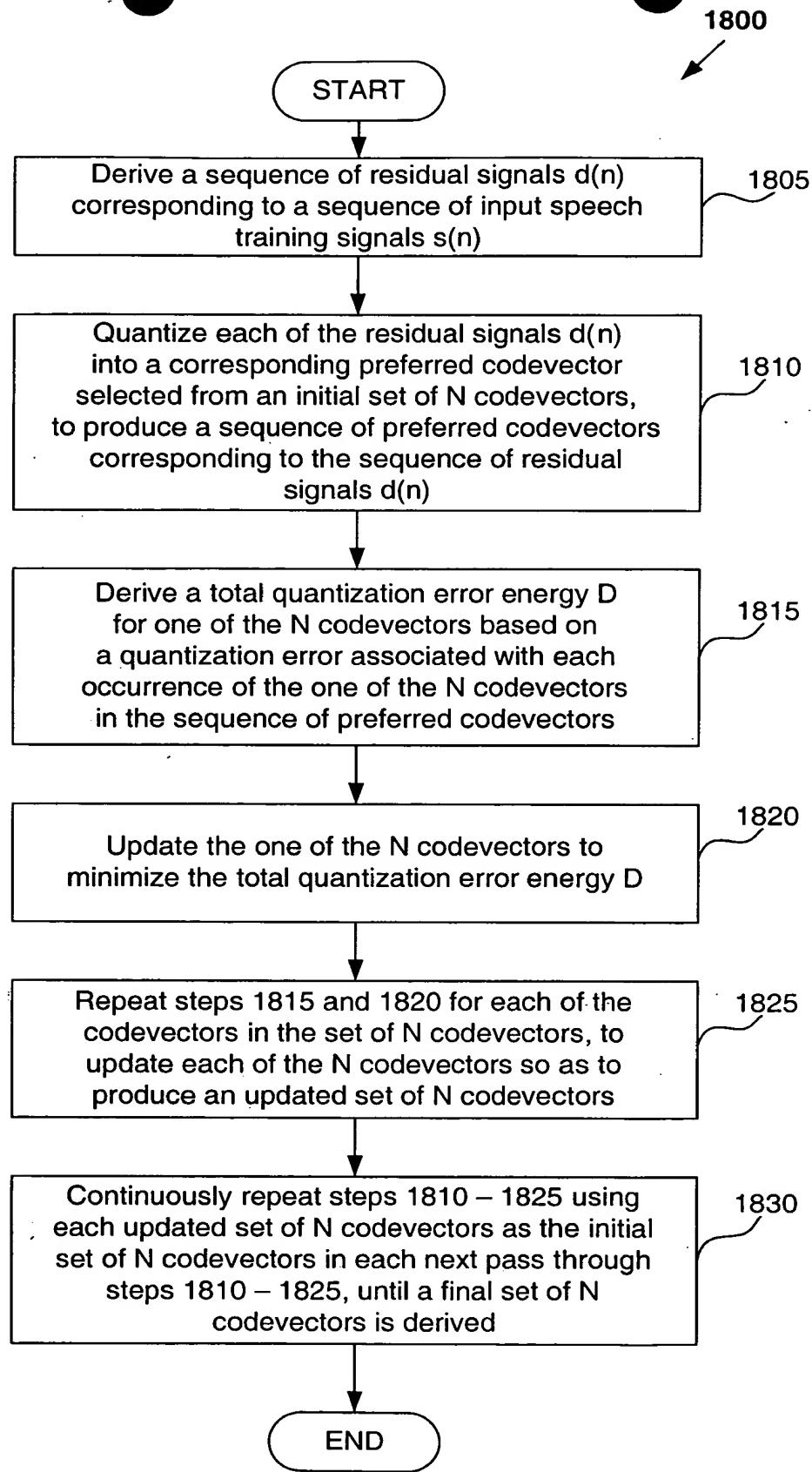


FIG. 18

Computer System 1900

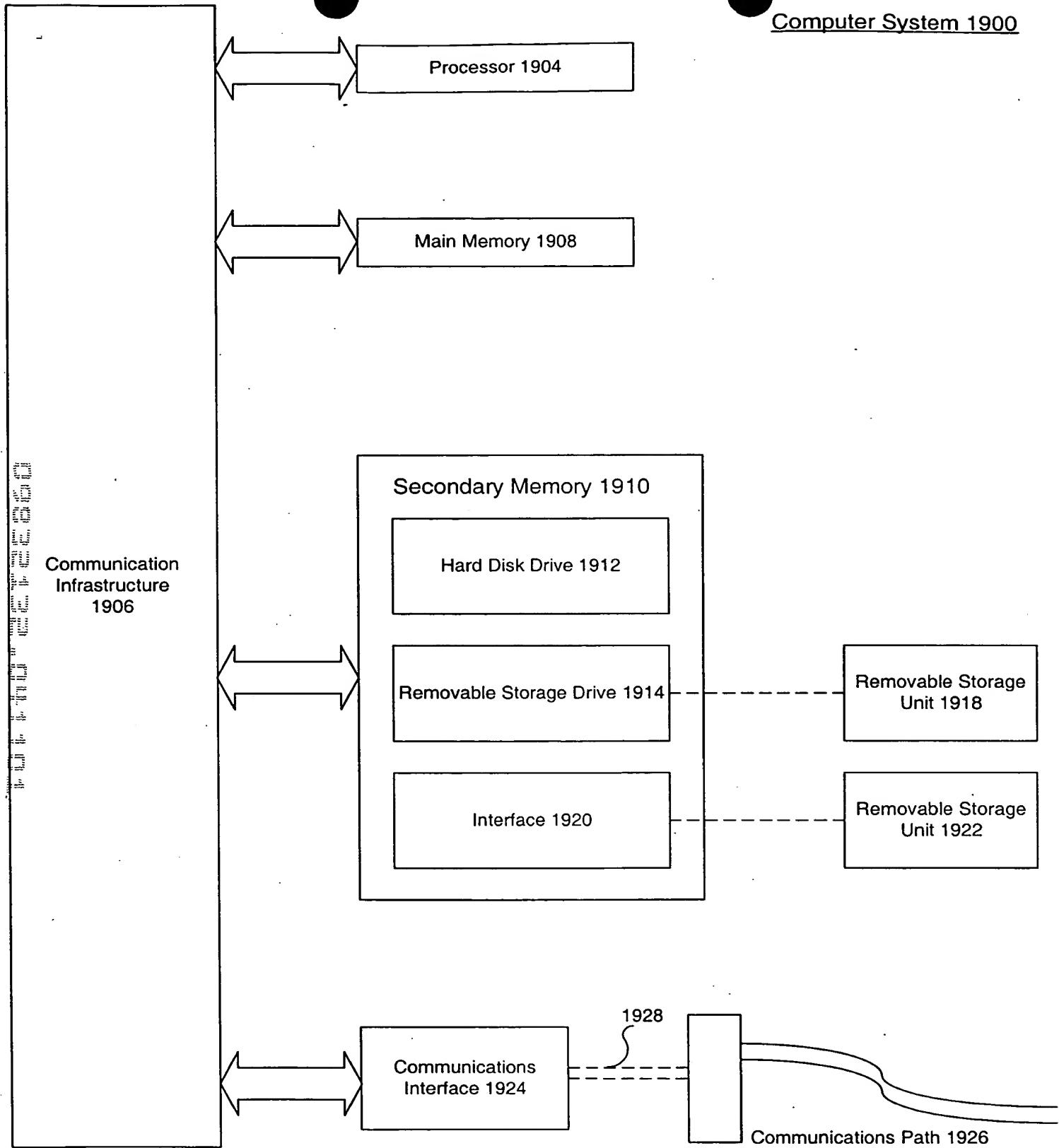


FIG. 19